CA-7®

Primer

3.3

COMPUTER ASSOCIATES®

Software superior by design.

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Contents

Chapter 1. Introduction

This CA-7 Primer teaches new CA-7 users how to use CA-7 to perform basic scheduling functions. It is designed to be used either offline or online.

1.1 Getting Started

This chapter explains how to use the CA-7 Primer, how to log on and off of CA-7, how to use screens to define the CA-7 database, and how to display command output.

1.2 Using This Book

This CA-7 Primer introduces you to the basic CA-7 tasks and shows you how to perform those tasks online. We recommend that you perform the tasks on your CA-7 system as you go through the book. Since this may require you to perform functions that you might not perform as part of your job, ask your CA-7 security administrator for temporary authorization (or for the use of a training ID) to allow you to perform these functions.

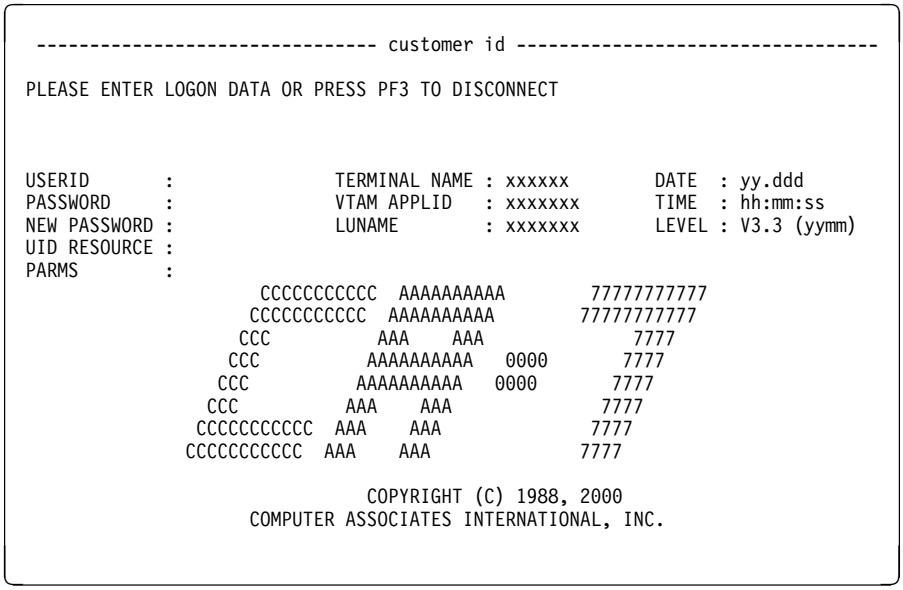
In case you cannot perform the tasks in this book online, we have included pictures of all the screens you would see online so you can still use this book to learn CA-7. If you do perform these tasks online, the data you see on your screens may be different from the data you see in this book. This is especially true if a number of jobs in your shop are already under CA-7 control or if your shop has defined defaults that are different from the defaults supplied with CA-7. Please ignore these differences; they will not prevent you from completing the exercises in this book.

If CA-7 does not seem to be working the way the book says it does, check your screen for error messages, look them up in the *CA-7 Message Guide*, and follow the actions suggested there. If no error message appears on your screen, check with your CA-7 administrator or systems programmer to see if your problem is caused by user exits or security restrictions that are in effect at your shop. If the problem persists, call Computer Associates for technical support.

You can skip the chapters in this book that do not apply to your job (except the last chapter which tells you how to delete the entries you have made in the database). You can also stop reading this book at any point and continue another time. Follow the directions on 1.6, “Logging Off” on page 1-14 for logging off, and then when you are ready to start again, follow the directions on 1.3, “Logging On” on page 1-4 for logging on again.

1.3 Logging On

Use this logo screen to log on to CA-7:



Ask your CA-7 administrator or systems programmer how to display this screen on your terminal. When it is displayed, key in your USERID and a PASSWORD, if one is required. Press Enter. (If you do not know what these are, ask your CA-7 administrator.)

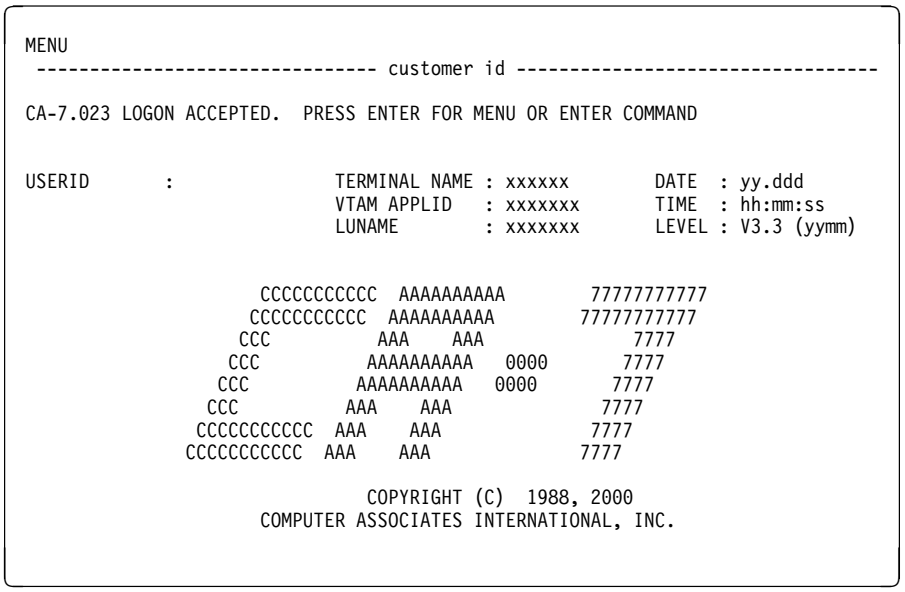
If your shop uses CA-7 under ISPF, follow these instructions to log on to CA-7:

1. Select CA-7 from your ISPF menu.
2. When the CA-7 Primary Option Menu is displayed, select the ONLINE option.
3. When the CA-7 logo screen is displayed, you will see a message telling you that you are automatically logged on to CA-7. If your TSO ID has not been defined to CA-7, you will see a message telling you that your ID is unauthorized. Ask your CA-7 security administrator to authorize your ID or give you an ID that you can use to complete the exercises in this CA-7 Primer.

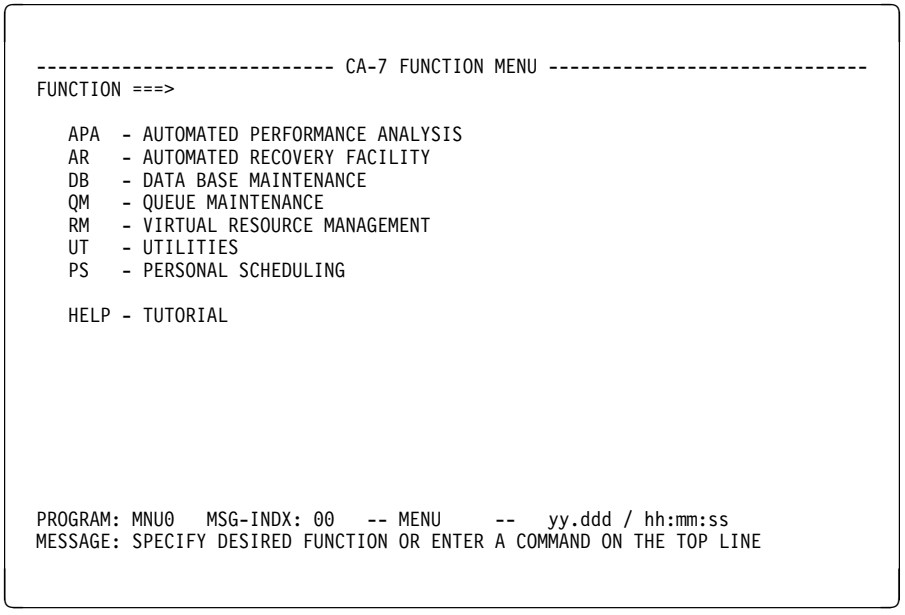
If CA-7 is not an option on your ISPF menu, ask your systems programmer how to select the CA-7 application under ISPF.

Note: At any point you can log off, see 1.6, “Logging Off” on page 1-14.

The CA-7 logon screen appears. Notice MENU in the upper-left corner of the screen. This is the top line command to take you to the menu for CA-7 formatted screens.



Press Enter to get to the next screen which displays the CA-7 function menu. At any time, you may enter the top line command MENU to transfer to this screen.



1.4 Accessing the Database

All of the screens you will use to add information to the CA-7 database can be accessed from the Data Base Maintenance Menu. Display this menu now by typing this command on the top line of your screen (above the message telling you that your logon was accepted):

DB

When you press Enter, this screen is displayed:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
                ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT



PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

The menu lets you select nine different functions. Four of the functions take you directly to formatted screens which you will use for various database maintenance tasks, like defining jobs or networks. Display the screen that defines jobs now by typing **1** in the FUNCTION field.

When you press Enter, this screen is displayed:

```
------------------------  CA-7 CPU JOB DEFINITION  -------------------------
FUNCTION:           (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB:
GENERAL:      SYSTEM:           JOBNET:           OWNER:           UID:

JCL:          ID:      MEMBER:           RELOAD:    EXEC:    RETAIN-JCL:
              LIB:
REQUIREMENTS: HOLD:    JCL-OVRD:    USE-OVRD-LIB:    VERIFY:    MAINT:
              SATISFACTION LEAD-TIME:  JOB:     DSN:     ARFSET:

EXECUTION:    MAINID:       INSERT-RMS:    COND-CODE:       RO:
              DONT SCHEDULE -- BEFORE:             AFTER:

MESSAGES:     LTERM:           REQUIREMENT-LIST:    PROMPTS:
              ERROR MSGS -- RQMTS NOT USED:    DSN NOT FOUND:

RESOURCES:    REGION:       CLOCK-TIME:       CPU-TIME:
              CLASS:    PRTY:       MSGCLASS:
              TAPE DRIVES...TYPE1:     M     C   TYPE2:     M     C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

This screen contains the following information:

- The top line is blank. You can use it to issue CA-7 commands. We will see how this works on 1.5, “Displaying Command Output” on page 1-12. (A command entered here overrides any other entries on the screen.)
- The next line gives the name of the screen.
- The next line contains the FUNCTION field. This is where you tell CA-7 what you want to do with the information on the rest of the screen. For example, you would type ADD to add a new job to the database.
- The body of the screen contains information that is stored in the CA-7 database.
- The third line from the bottom of the screen contains CA-7 program data, the screen ID, and the date and time. Each screen has a unique ID. It is DB.1 on this screen. You can type this ID on any other screen to *transfer* directly to this screen. This is illustrated on 2.5, “Copying Job Records” on page 2-8.
- The last two lines can contain messages. **Be sure to read them.** They will tell you if there is some action you have to take next or if there was an error in the action you just took. Messages are described in the *CA-7 Message Guide*. The message number consists of the contents of the PROGRAM field in the line above, followed by the contents of the MSG-INDX field. For example, the number of the message shown on this screen is SM20-00.

To return to the menu now, type **DB** in the FUNCTION field and press Enter. (Instead of typing DB, you may press PF3 to return to the menu, unless you are using CA-7 under ISPF and have defined PF3 for another function.)

You are returned to the menu:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
               ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT



PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

Continuing down the menu, functions 2, 3, and 4 take you to submenus which you can use to select formatted scheduling, predecessor/successor, or workload documentation screens. Display the scheduling submenu now by typing **2** in the FUNCTION field.

When you press Enter, this screen is displayed:

```
--------------------------  CA-7 SCHEDULING MENU  ---------------------------
FUNCTION ===>


DATE/TIME SCHEDULING FOR:
   1 - CPU JOB
   2 - INPUT NETWORK
   3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
   4 - JOB TRIGGERING OTHER CPU JOB(S)
   5 - INPUT NETWORK TRIGGERING CPU JOB(S)
   6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
   7 - MODIFICATION TO RESOLVED SCHEDULE DATES
   8 - BASE CALENDAR MAINTENANCE



PROGRAM: SM70   MSG-INDX: 00   -- DB.2     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

This screen contains the following information:

- The top line is blank, like on the CPU Job Definition screen, so you can use it to enter commands.
- The next line gives the name of the screen.
- The next line contains the FUNCTION field. This is where you select the scheduling screen that you want to display.
- The body of the screen lists the scheduling screens and the function codes that select them.
- The three lines at the bottom contain program data and messages, just like on the CPU Job Definition screen. The ID of this screen is DB.2.

Now select the first formatted scheduling screen by typing **1** in the FUNCTION field.

When you press Enter, the CPU Job Scheduling screen is displayed:

```
------------------------  CA-7 CPU JOB SCHEDULING  --------------------------
FUNCTION:           (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)

JOB:


SCAL:      (DEFAULT SCAL ID FOR ADDS)



SCHID-COUNT: 000









PROGRAM: SM71   MSG-INDX: 00   -- DB.2.1   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

This is the screen you will use to schedule CPU jobs after you add them to the database. We will learn how to do this in Chapter 3. Type **DB** in the FUNCTION field and press Enter to return to the main menu (or press PF3 twice):

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
                ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT




PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

This time, type **7** to display the JCL screen.

When you press Enter, this screen is displayed:

```
----------------------  CA-7 JCL LIBRARY MAINTENANCE  -----------------------
FUNCTION:           (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,
                     RENAME,REPL,RUN,RUNH,SAVE)

MEMBER:            NEWNAME/OPTION:

DSN:                                                 JCL-ID:
VOLSER:                                              JCLLIB:

ACTIVE SIZE: 0000









PROGRAM: SM50   MSG-INDX: 00   -- DB.7     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

You can use this screen to display the JCL for any of your jobs. All you have to provide is the JCL's member name (usually the same as the job name) and the number of the library (if other than 0) where the JCL is stored (see page 1-13). When you press Enter, the JCL is displayed and you can edit it.

If you would like additional information on this screen or any of the screens in this CA-7 Primer or a description of the screens not covered in this CA-7 Primer, see the *CA-7 Database Maintenance Guide*.

1.5 Displaying Command Output

In addition to the formatted screens you will use to edit JCL and add information to the CA-7 database, you can also get information from CA-7 by typing various commands on the top line of any CA-7 screen. The command you type should stay on the top line of the screen and the information you request will be displayed below it. Try this now by moving the cursor to the top line of the JCL Library Maintenance screen (above the FUNCTION field and the screen name) and typing the following command:

/DISPLAY,ST=KEY

When you press Enter, you will see a screen that lists PF and PA keys and tells you what commands can be executed by pressing those keys:

```
/DISPLAY,ST=KEY

*** KEY DISPLAY ***  (SD1001 )                                        PAGE 0001
KEY      FUNCTION

           --- INITIALIZATION ---
PF12  VTAM LOGOFF KEY
           --- DEFAULT ---
PF01  /PURGPG
PF02  /COPY
PF03  /NXTMSG (FORMATTED SCREENS USE PF3 TO RETURN TO MENU)
PA01  /PAGE+1 (FORMATTED SCREENS USE PF8 FOR /PAGE+1)
PA02  /PAGE-1 (FORMATTED SCREENS USE PF7 FOR /PAGE-1)
```

The screen you see will vary, depending on the way PF and PA keys were defined in your shop.

If the output from this command is so long it will not all fit on one screen, press Enter to scroll to the next screen.

When you are finished looking at the output, you have three choices:

- You can repeat your command by simply retyping the first character. This will show any data that has changed since you first entered the command.
- You can enter another command by typing the new command directly over the old command on the top line of the screen. This can be either a request for different output or DB to return to the Data Base Maintenance Menu. (If your new command is shorter than the old command, use the Erase EOF key to erase the characters you do not need.)
- If your new command is similar to the old command, you can modify the parts of the command that are different.

Try the third choice now by typing **JCL** over **KEY.** When you press Enter, the output on your screen will change to look like this:

```
/DISPLAY,ST=JCL

*** JCL DISPLAY ***                                              PAGE 0001
            DATASET NAME                    INDEX ALT  DSORG  VOLSER   LTERM

CAI.L233.HELP                                255  N/A  PDS    M80008  MASTER
CAI.L200.OVERRIDE                            254  N/A  PDS    M80008  MASTER
CAI.L200.JCLLIB                              200  N/A  PDS    M80008  MASTER
CAI.L200.PDSLIB                              000  N/A  PDS    M80008  MASTER
```

This screen lists the JCL libraries that have been defined to CA-7. The list you see will be different, depending on the JCL libraries used in your shop. Each library has an index number in addition to its name. This is the number you will use to tell CA-7 where JCL is stored.

Return to the Data Base Maintenance Menu now by typing **DB** over the /DISPLAY command and using your Erase EOF key to blank out the characters at the end of the /DISPLAY command. Then press Enter to display the menu.

1.6 Logging Off

To log off of CA-7, enter this command on the top line of any CA-7 screen:

/LOGOFF

To return to VTAM or the CA-7 Primary Option menu under ISPF, enter this command:

/CLOSE

Chapter 2. Defining Jobs

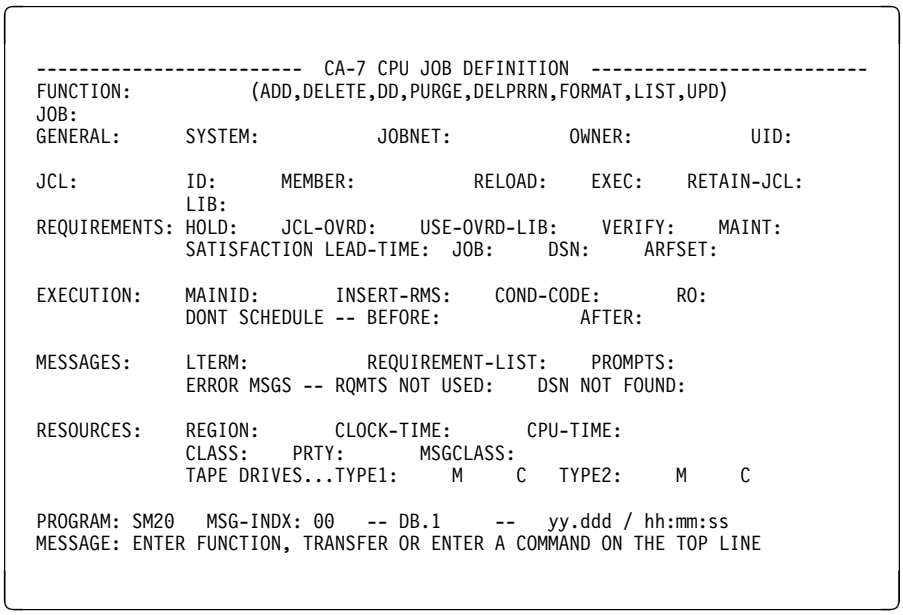
This chapter tells you how to define computer jobs to CA-7.

2.1 Displaying the CPU Job Definition Screen

CPU jobs are defined to CA-7 on the CPU Job Definition screen. To display the CPU Job Definition screen again, type **1** in the FUNCTION field of the Data Base Maintenance Menu like this:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===> 1

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
               ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT



PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

When you press Enter, the CPU Job Definition screen is displayed:



It allows you to enter all of the information about a job, although not all of this information is required to define every job. We will practice defining jobs by supplying a minimum of information. (For a detailed description of all the fields on the CPU Job Definition screen, see the *CA-7 Database Maintenance Guide*.)

2.2 Adding a Job

We will start by defining a job with the following characteristics:

- Its job name will be your name followed by the letter A.
- It will be assigned to a system called PRIMER.
- It will not be submitted or executed on the CPU.
- It will not send prompting messages to the operator if it is going to be late.

Use the following fields on the CPU Job Definition screen to define this information to CA-7:

FUNCTION: Type **ADD.**

JOB: Give the name of the job: use the first 7 letters of your name followed by the letter A. We will use the job name NAMEA in the rest of this book, but it is important to use your own name instead of the letters NAME so that everyone who performs the exercises in this book has a unique set of jobs. (If two people in your shop have the same name, add an initial so that each name is unique.)

SYSTEM: Type **PRIMER.**

EXEC: Type **N** to indicate that this job should not execute. If you leave this field blank, it defaults to Y.

PROMPTS: Type **N** to indicate that prompting messages not be sent if the job is late. If you leave this blank, it defaults to Y.

Leave the rest of the fields blank.

When you have entered this information on your screen, press Enter. Your screen should now look like this, with the ADD SUCCESSFUL message at the bottom of the screen.

```
------------------------  CA-7 CPU JOB DEFINITION  --------------------------
FUNCTION:           (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB: NAMEA
GENERAL:      SYSTEM: PRIMER    JOBNET:           OWNER:           UID: 0

JCL:          ID: 0    MEMBER: NAMEA     RELOAD: N  EXEC: N  RETAIN-JCL: N
              LIB:
REQUIREMENTS: HOLD: N  JCL-OVRD: N  USE-OVRD-LIB: N  VERIFY: N  MAINT: N
              SATISFACTION LEAD-TIME:  JOB: 0   DSN: 0   ARFSET:

EXECUTION:    MAINID: ALL   INSERT-RMS: N  COND-CODE: 0     RO: 0
              DONT SCHEDULE -- BEFORE: 00000 0000  AFTER: 99999 0000

MESSAGES:     LTERM:           REQUIREMENT-LIST: Y  PROMPTS: N
              ERROR MSGS -- RQMTS NOT USED: Y  DSN NOT FOUND: Y

RESOURCES:    REGION: 0     CLOCK-TIME: 0000  CPU-TIME: 00000
              CLASS:    PRTY: 000   MSGCLASS:
              TAPE DRIVES...TYPE1: 000 M 000 C   TYPE2: 000 M 000 C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: ADD SUCCESSFUL
```

Check your screen against this picture to make sure you have filled in the values correctly (especially N in the EXEC field).

CA-7 automatically fills in many of the other fields for you with default values; these are the values it assumes you want unless you specify something different. For example, it assumes that the member name of the JCL is the same as the job name and automatically fills in the MEMBER field with the job name. For more information on these default values, see the description of the CPU Job Definition screen in the *CA-7 Database Maintenance Guide*.

Note: The default values filled in on your screen will be different from the default values shown here if a default job record has been customized at your shop. This will not affect the exercises in this book.

2.3 Adding Another Job

With NAMEA still displayed on your terminal, we can easily add another job with similar characteristics. Type the following values on your screen, right over the values that are there:

FUNCTION: Type the **A** in ADD again.

JOB: Change the job name to **NAMEB.**

Assume that you want to leave all the other values the same and press Enter:

```
-------------------------  CA-7 CPU JOB DEFINITION  --------------------------
FUNCTION:           (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB: NAMEB
GENERAL:      SYSTEM: PRIMER    JOBNET:           OWNER:           UID: 0

JCL:          ID: 0    MEMBER: NAMEB     RELOAD: N  EXEC: N  RETAIN-JCL: N
              LIB:
REQUIREMENTS: HOLD: N  JCL-OVRD: N  USE-OVRD-LIB: N  VERIFY: N  MAINT: N
              SATISFACTION LEAD-TIME:  JOB: 0   DSN: 0   ARFSET:

EXECUTION:    MAINID: ALL   INSERT-RMS: N  COND-CODE: 0     RO: 0
              DONT SCHEDULE -- BEFORE: 00000 0000  AFTER: 99999 0000

MESSAGES:     LTERM:           REQUIREMENT-LIST: Y  PROMPTS: N
              ERROR MSGS -- RQMTS NOT USED: Y  DSN NOT FOUND: Y

RESOURCES:    REGION: 0     CLOCK-TIME: 0000  CPU-TIME: 00000
              CLASS:    PRTY: 000   MSGCLASS:
              TAPE DRIVES...TYPE1: 000 M 000 C   TYPE2: 000 M 000 C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: ADD SUCCESSFUL
```

The ADD SUCCESSFUL message should be displayed at the bottom of the screen again, indicating that NAMEB has been added to the database with the same values as NAMEA, except for MEMBER which automatically changes to match the job name.

2.4 Displaying Job Records

To make sure that NAMEA and NAMEB have both been added to the database, move the cursor to the top line of your screen and type this command:

LJOB,JOB=NAME*

When you press Enter, this output screen is displayed:

```
LJOB,JOB=NAME*
JOB=NAME*                                                DATE=yy.ddd    PAGE 0001

  JOB    ----JCL----   SYSTEM  USR MAIN PROSE  SCHED  --NUMBER OF-   LAST-RUN
  NAME    ID  MEMBER   -NAME-  -ID -ID- DSNBR  DSNBR  STP DDS RUNS   DATE/TIME

NAMEA    000 NAMEA    PRIMER   000 ALL  *NONE* *NONE* 000 000 0000  00000/0000
NAMEB    000 NAMEB    PRIMER   000 ALL  *NONE* *NONE* 000 000 0000  00000/0000

SLIA-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

It gives the basic information for NAMEA followed by the basic information for NAMEB. If any other jobs in your database start with the letters NAME, they will be listed too.

2.5 Copying Job Records

If you want to add similar jobs later, you can do so by copying a job like NAMEA that has already been defined. To do this, you must list NAMEA's record on your screen, make any changes you want, then add the new job to the database. To illustrate this, type **DB.1** on the top line of your screen and press Enter. A blank CPU Job Definition screen is displayed:

```
------------------------  CA-7 CPU JOB DEFINITION  --------------------------
FUNCTION:           (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB:
GENERAL:      SYSTEM:           JOBNET:           OWNER:           UID:

JCL:          ID:      MEMBER:           RELOAD:    EXEC:    RETAIN-JCL:
              LIB:
REQUIREMENTS: HOLD:    JCL-OVRD:    USE-OVRD-LIB:    VERIFY:    MAINT:
              SATISFACTION LEAD-TIME:  JOB:     DSN:     ARFSET:

EXECUTION:    MAINID:       INSERT-RMS:    COND-CODE:       RO:
              DONT SCHEDULE -- BEFORE:             AFTER:

MESSAGES:     LTERM:           REQUIREMENT-LIST:    PROMPTS:
              ERROR MSGS -- RQMTS NOT USED:    DSN NOT FOUND:

RESOURCES:    REGION:       CLOCK-TIME:       CPU-TIME:
              CLASS:    PRTY:       MSGCLASS:
              TAPE DRIVES...TYPE1:     M     C   TYPE2:     M     C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

To display NAMEA, you just have to enter values in two fields:

FUNCTION: Type **LIST.**

JOB: Type the name of a job you have already defined, in this case **NAMEA.**

When you press Enter, NAMEA's record is displayed on the screen:

```
------------------------  CA-7 CPU JOB DEFINITION  -------------------------
FUNCTION:           (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB: NAMEA
GENERAL:      SYSTEM: PRIMER    JOBNET:           OWNER:           UID: 0

JCL:          ID: 0    MEMBER: NAMEA     RELOAD: N  EXEC: N  RETAIN-JCL: N
              LIB:
REQUIREMENTS: HOLD: N  JCL-OVRD: N  USE-OVRD-LIB: N  VERIFY: N  MAINT: N
              SATISFACTION LEAD-TIME:  JOB: 0   DSN: 0   ARFSET:

EXECUTION:    MAINID: ALL   INSERT-RMS: N  COND-CODE: 0     RO: 0
              DONT SCHEDULE -- BEFORE: 00000 0000  AFTER: 99999 0000

MESSAGES:     LTERM:           REQUIREMENT-LIST: Y  PROMPTS: N
              ERROR MSGS -- RQMTS NOT USED: Y  DSN NOT FOUND: Y

RESOURCES:    REGION: 0     CLOCK-TIME: 0000  CPU-TIME: 00000
              CLASS:    PRTY: 000   MSGCLASS:
              TAPE DRIVES...TYPE1: 000 M 000 C   TYPE2: 000 M 000 C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: LIST SUCCESSFUL
```

To add a similar job to the database, fill in these fields:

FUNCTION: Change LIST to **ADD.**

JOB: Type the name of the new job. In this case, call it **NAMEC.**

Then press Enter and wait for the ADD SUCCESSFUL message at the bottom of the screen.

Now add NAMED to the database by retyping the **A** in the FUNCTION field and changing the JOB field to **NAMED.** Repeat these steps for NAMEE. We will now use these jobs to learn how to schedule jobs to run automatically.

Chapter 3. Scheduling Jobs

Now that we have defined some jobs to CA-7, the next step is to schedule them so they will automatically run on the right day in the right order. One way to schedule a job to run is by telling CA-7 when you want it to run and then letting CA-7 find it and submit it at that time. To do this, you must have one or more *calendars.*

3.1 Selecting a Calendar

Calendars tell CA-7 which days are normal processing days and which days are nonprocessing days (weekends or holidays). They are defined by your CA-7 administrator or systems programmer to reflect the normal processing days and holidays in your shop. (Sample calendars are also provided with CA-7.)

To see the calendars in your shop, type this command on the top line of any CA-7 screen:

/DISPLAY, FM=SCAL

When you press Enter, all of your calendars are listed on the screen:

```
/DISPLAY,FM=SCAL

*** FMTBLK DISPLAY ***                                          PAGE 0001
          ENTRY          USE  STRGE  FLAG  ----LOADS----
  NAME    POINT    TTR   CNT  REQRD   0   TOTAL  ACTUAL  STATUS

SCAL99PE  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL99WD  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL99WE  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL9903  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL995D  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL995R  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL997D  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL997R  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL00PE  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL00WD  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL00WE  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL0003  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL005D  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL005R  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL007D  000000  E2C300  000  000000  21   000000 000000  RELINK,
SCAL007R  000000  E2C300  000  000000  A1   000000 000000  RELINK,
```

To complete the exercises in this book, you need to use a calendar which defines weekdays as normal processing days and has at least one holiday. To see the processing days and holidays defined on each of your calendars, you can type this command on the top line of any CA-7 screen:

PRINT,YEAR=yy,SCAL=xx

where **yy** is the year identified by the fifth and sixth characters and **xx** is the last two characters in the calendar name. For example, we are going to use SCAL915D to schedule the jobs in this book. To see the way this calendar has been defined, you would type this command on your screen:

PRINT,YEAR=91,SCAL=5D

Type this command on your screen now, substituting the year and name of one of your calendars for **91** and **5D,** if you do not have a calendar called SCAL915D.

When you press Enter, you will see the first month of the calendar you specified. For example, here is January on the SCAL915D calendar:

```
                                                                          PAGE NO. 0001

*******************************************************************************
*                        CA-7 BASE CALENDAR      SCAL915D                     *
*                          YEAR 1991   GEN DATE yy.ddd                        *
*                               SCHD DAY ONLY = N                             *
*******************************************************************************
**                                 MONTH 01 JAN                              **
**            SUN     MON     TUE     WED     THU     FRI     SAT            **
**                           (B01)     02      03      04                     *
**                     07      08      09      10      11                     *
**                     14      15      16      17      18                     *
**                     21      22      23      24      25                     *
**                     28      29      30    .E01.                            *
*******************************************************************************
```

Only the processing days (workdays) are displayed. In this case they are every weekday except January 1 which was defined as a holiday on SCAL915D. In addition, the first and last days of January are identified:

- The first day of the first month is identified by the characters B01 in place of 01. Since this is a nonprocessing day, the characters are enclosed in parentheses.
- The last day of the first month is identified by the characters E01 in place of 31. Since this is a processing day, the characters are enclosed in periods.

To scroll forward to the next month, press Enter. February's SCAL915D calendar will look like this:

```
                                                                    PAGE NO. 0002

*******************************************************************************
*                        CA-7 BASE CALENDAR      SCAL915D                     *
*                          YEAR 1991   GEN DATE yy.ddd                        *
*                               SCHD DAY ONLY = N                             *
*******************************************************************************
**                                 MONTH 02 FEB                              **
**            SUN     MON     TUE     WED     THU     FRI     SAT            **
**                                                   .B02.                    *
**                     04      05      06      07      08                     *
**                     11      12      13      14      15                     *
**                             19      20      21      22                     *
**                     25      26      27    .E02.                            *
*******************************************************************************
```

February 18 is a holiday on this calendar so it is not displayed.

Keep scrolling through as many months as you want to see. You may stop at any point and go on to the next exercise.

3.2 Scheduling a Job To Run On Certain Days

3.2.1 Displaying the CPU Job Scheduling Screen

Now we will learn how to schedule a job to run Tuesdays and Thursdays by 9 PM or the next available processing day if Tuesday or Thursday is a holiday.

Return to the Data Base Maintenance Menu by typing **DB** on the top line of your current screen. When you press Enter, the menu is displayed again:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
               ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT




PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

This time we want to go to the scheduling screens, so type **2** in the FUNCTION field and press Enter.

The Scheduling Menu is displayed:

```
--------------------------  CA-7 SCHEDULING MENU  ---------------------------
FUNCTION ===>


DATE/TIME SCHEDULING FOR:
   1 - CPU JOB
   2 - INPUT NETWORK
   3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
   4 - JOB TRIGGERING OTHER CPU JOB(S)
   5 - INPUT NETWORK TRIGGERING CPU JOB(S)
   6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
   7 - MODIFICATION TO RESOLVED SCHEDULE DATES
   8 - BASE CALENDAR MAINTENANCE



PROGRAM: SM70   MSG-INDX: 00   -- DB.2     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Type **1** in the FUNCTION field to select scheduling for CPU jobs.

When you press Enter, the CPU Job Scheduling screen is displayed:

```
------------------------  CA-7 CPU JOB SCHEDULING  --------------------------
FUNCTION:           (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)

JOB:


SCAL:      (DEFAULT SCAL ID FOR ADDS)



SCHID-COUNT: 000









PROGRAM: SM71   MSG-INDX: 00   -- DB.2.1   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

We use this screen to tell CA-7 what job we are scheduling and what calendar it is to be based on. To do this, fill in the following fields on this screen:

FUNCTION: Type **EDIT** to define scheduling information.

JOB: Type **NAMEA** to identify the job.

SCAL: Give the 2-character name of a calendar that has been defined in your shop. The rest of the illustrations in this book are based on calendar 5D but you may use another calendar if 5D has not been defined in your shop for the current year. (You can get this information from the calendars you listed on 3-3.)

3.2.2 Defining the Scheduling Criteria

When you press Enter, this edit screen is automatically displayed:

```
------------------  CA-7 CPU JOB SCHEDULING PARAMETER EDIT  ------------------
FUNCTION:           (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
JOB: NAMEA      SCHID:      SCAL:   ROLL:     INDEX:
           DOTM LDTM SBTM


__   __ DAILY
__   __ WEEKLY    SUN:    MON:    TUE:    WED:    THU:    FRI:    SAT:

__   __ MONTHLY   JAN:    FEB:    MAR:    APR:    MAY:    JUN:
                  JUL:    AUG:    SEP:    OCT:    NOV:    DEC:
          WEEK:                    DAY-OF-WEEK:
          RDAY:

__   __ ANNUAL    DAY:

                                                          DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                       SCHID-COUNT: 000

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.1-E --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Fill in the fields on this screen as follows:

FUNCTION: Type **ADD**.

SCHID: Type **1** to indicate that this is the first schedule we have defined for NAMEA. (We will learn more about this field on 3-16.)

ROLL: Type **F**. This tells CA-7 to roll the scheduling of NAMEA forward to the next day if Tuesday or Thursday happens to be a holiday on calendar 5D.

DOTM Use your tab key to place the cursor under this heading. It tells what time the job has to end (its due-out time). Specify **2100**.

LDTM Use this field to tell how many minutes it normally takes to process the job (its lead time). Specify **30** to give the job a half hour to run. CA-7 uses this number to figure out when it has to start the job to be done on time. In this case, it has to start the job by 2030 so it can be done by 2100.

WEEKLY Tab down to this field and type an **X** to the left of the word WEEKLY and additional **Xs** to the right of TUE and THU.

Press Enter and watch for the ADD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
------------------  CA-7 CPU JOB SCHEDULING PARAMETER EDIT  ------------------
FUNCTION: ADD       (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
JOB: NAMEA      SCHID: 1    SCAL:   ROLL: F   INDEX: 000
           DOTM LDTM SBTM
           2100 0030

__ __ DAILY
__ X __ WEEKLY    SUN:    MON:    TUE: X  WED:    THU: X  FRI:    SAT:

__   __ MONTHLY   JAN:    FEB:    MAR:    APR:    MAY:    JUN:
                  JUL:    AUG:    SEP:    OCT:    NOV:    DEC:
          WEEK:                   DAY-OF-WEEK:
          RDAY:

__   __ ANNUAL    DAY:

                                                          DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                       SCHID-COUNT: 001

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.1-E --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL
```

Now that you have defined the scheduling criteria for NAMEA, you must save it by typing **SS** after FUNCTION and pressing Enter. This automatically returns you to the CPU Job Scheduling screen:

```
-------------------------  CA-7 CPU JOB SCHEDULING  --------------------------
FUNCTION: SAVE      (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)

JOB: NAMEA


SCAL:  5D  (DEFAULT SCAL ID FOR ADDS)




SCHID-COUNT: 001




PROGRAM: SM71   MSG-INDX: 00   -- DB.2.1   --   yy.ddd / hh:mm:ss
MESSAGE: SAVE FUNCTION SUCCESSFUL FOR SJnnnnnn
         SCHEDULE MUST BE RESOLVED
```

See the two messages at the bottom of the screen? They inform you that your schedule has been saved and that it must now be *resolved* .

3.2.3 Seeing When the Job Will Run

Resolving the schedule means telling CA-7 to compare it to the calendar you specified and determine the exact days the job will be processed. To resolve the schedule, you must issue the RESOLV command. To do this, type **RESOLV** in the FUNCTION field and press Enter. The next screen you see will have the RESOLV command on the top line. Move the cursor to the end of the RESOLV command and type:

,YEAR=yy

where **yy** is the current year. Press Enter.

When you press Enter, the screen will look something like this:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                  CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                    TIME hh:mm:ss                      PAGE NO. 0001
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

0001 SCHEDULES SELECTED FOR RESOLUTION

*****SCHEDULE RESOLUTION STARTED FOR SJnnnnnn JOB=NAMEA
**SCHEDULE DATA :
   ID=001   ROLL=F  INDEX=+000
   SCAL=    DOTM=2100  LEADTM=0030  STARTM=2030
            WEEKLY    DAY=TUE,THU
**SCHEDULE DAYS ROLL STARTED : ROLL=F
SRC1-113 JAN 01 (DAY# 001) ROLLED FORWARD TO JAN 02 (DAY# 002)
SRC1-113 JUL 04 (DAY# 185) ROLLED FORWARD TO JUL 05 (DAY# 186)
**SCHEDULE DAYS ROLL COMPLETED
*****SCHEDULE RESOLUTION COMPLETED FOR SJnnnnnn
                SCAL=915D JOB=NAMEA
```

The middle of the screen displays SCHEDULE DATA: these are the values you defined on the CPU Job Scheduling Parameter Edit screen.

The dates listed under SCHEDULE DAYS ROLL STARTED will be different from the dates shown in this book unless you are also using SCAL915D with holidays defined on January 1 and July 4. These dates show you what will happen to NAMEA if Tuesday or Thursday is a holiday: it will be processed on the following day (since we specified F in the ROLL field).

Press Enter to scroll forward to this screen:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                   TIME hh:mm:ss                    PAGE NO. 0002
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

*******************************************************************************
*                  CA-7 SCHEDULE CALENDAR FOR      SJnnnnnn                   *
*                                DATE yyddd                                   *
*  BASE CALENDAR SCAL915D  (DEFAULT)                                          *
*******************************************************************************
*                               MONTH 01 JAN                                  *
*             SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                       02      03                            *
*                               08              10                            *
*                               15              17                            *
*                               22              24                            *
*                               29              31                            *
*******************************************************************************
```

This screen shows you when NAMEA will be processed in January: every Tuesday and Thursday except for January 1 which is a holiday. Press Enter to scroll forward again, to this screen:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                   TIME hh:mm:ss                    PAGE NO. 0003
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

*******************************************************************************
*                  CA-7 SCHEDULE CALENDAR FOR      SJnnnnnn                   *
*                                DATE yyddd                                   *
*  BASE CALENDAR SCAL915D  (DEFAULT)                                          *
*******************************************************************************
*                               MONTH 02 FEB                                  *
*             SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                                                             *
*                               05              07                            *
*                               12              14                            *
*                               19              21                            *
*                               26              28                            *
*******************************************************************************
```

This screen shows you that NAMEA will be processed every Tuesday and Thursday in February. You can scroll through the rest of the months or stop at any time and go on to the next exercise.

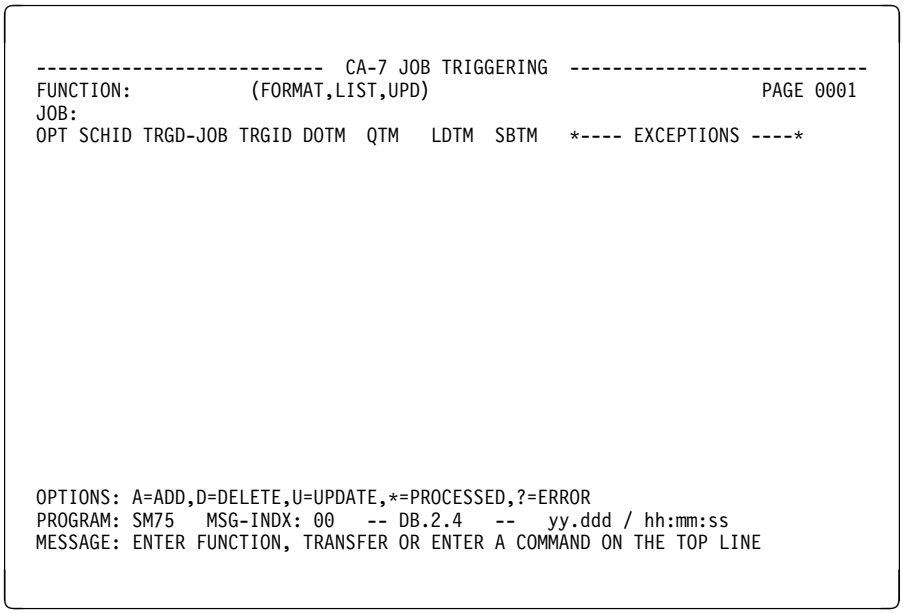
3.3 Scheduling a Job To Run After Another Job

3.3.1 Triggering Jobs

Some jobs need to be scheduled after other jobs, regardless of what day those other jobs run. For example, assume that NAMEB has to run after NAMEA, regardless of whether NAMEA runs on Tuesday and Thursday or is rolled forward to Wednesday or Friday. CA-7 lets you schedule NAMEB to be *triggered* by NAMEA. This means that NAMEB is automatically scheduled whenever NAMEA ends successfully. Here is how to define this:

1. Type **DB.2** at the top of any screen to return to the Scheduling Menu.
2. When the Scheduling Menu is displayed, type **4** in the FUNCTION field to select job triggering.

When you press Enter, this screen is displayed:



To trigger NAMEB from NAMEA, fill in the fields on this screen as follows:

FUNCTION: Type **UPD** (since you are updating the NAMEA record).

JOB: Identify the job that runs first, in this case **NAMEA.**

OPT Tab down to the line under the OPT heading and type **A** to add the triggered job.

SCHID Type **1.**

TRGD-JOB Identify the job that is to run when NAMEA ends, in this case **NAMEB.**

QTM Specify **30** to indicate that NAMEB will be late if it has to wait more than 30 minutes before it starts processing. CA-7 will calculate its due-out time for you, based on this number.

LDTM Assume that NAMEB also takes **30** minutes to process.

When these fields are filled in, press Enter and watch for the UPD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
--------------------------  CA-7 JOB TRIGGERING  ----------------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
JOB:  NAMEA
OPT SCHID TRGD-JOB TRGID DOTM  QTM   LDTM  SBTM   *---- EXCEPTIONS ----*
 *   001  NAMEB     000        0030  0030

OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM75   MSG-INDX: 00   -- DB.2.4   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

From now on, whenever NAMEA ends successfully, NAMEB will be scheduled.

3.3.2 Displaying the Triggers

To make sure that NAMEB will be triggered by NAMEA, move the cursor to the top line of your screen and type this command:

LJOB,JOB=NAMEA,LIST=TRIG

When you press Enter, this output screen is displayed:

```
LJOB,JOB=NAMEA,LIST=TRIG
JOB=NAMEA    LIST=TRIG                                    DATE=yy.ddd    PAGE 0001

  JOB    ----JCL----   SYSTEM  USR MAIN PROSE  SCHED  --NUMBER OF-   LAST-RUN
  NAME    ID  MEMBER   -NAME-  -ID -ID- DSNBR  DSNBR  STP DDS RUNS   DATE/TIME

NAMEA    000 NAMEA    PRIMER   000 ALL  *NONE* nnnnnn 000 000 0000  00000/0000

       -------------------------- TRIGGERED JOBS ----------------------------
          JOB=NAMEB    SCHID=001      QTM=0030 LEADTM=0030 SUBMTM=0000

SLIA-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

It gives the basic information for NAMEA across the middle of the screen and then lists all jobs that it will trigger. So far, the only job we have defined is NAMEB.

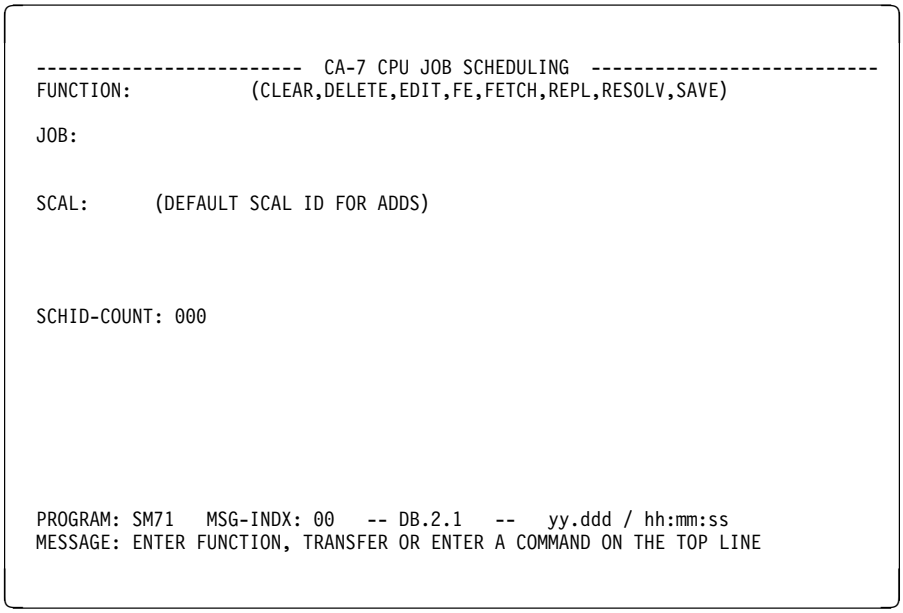
3.4 Scheduling a Job Differently

Now assume that we receive instructions to schedule NAMEA on Mondays in addition to Tuesdays and Thursdays, to run it every Monday even if Monday is a holiday, and to run NAMED after NAMEA on Mondays only. How do we go about this?

To begin with, we do not need to change the way we defined NAMEA on the CPU Job Definition screen in the last chapter. The definition of NAMEA stays the same, regardless of when it runs and what jobs run after it. (In fact, we cannot add another definition for NAMEA, since there is really only one job by that name.)

What we need to do is add another schedule for NAMEA. To keep this schedule separate from the original schedule, we are going to give it a different *schedule ID*. On 3-9 we used the number 1 when we scheduled NAMEA for Tuesdays and Thursdays. Now we are going to use schedule ID 2 to schedule NAMEA on Mondays. To do this, we must return to the CPU Job Scheduling screen and change the NAMEA scheduling record.

Return to the CPU Job Scheduling screen now by typing **DB.2.1** on the top line of your screen. When you press Enter, this screen is displayed:



What we need to do now is *fetch* (get) the NAMEA scheduling record and add to it. To do this, fill in these two fields:

FUNCTION: Type **FE** to fetch the scheduling record and go into edit mode.

JOB: Type **NAMEA** to identify the job you want to edit.

When you press Enter, the CPU Job Scheduling edit screen is automatically displayed with the scheduling criteria we defined on 3-9.

```
------------------  CA-7 CPU JOB SCHEDULING PARAMETER EDIT  ------------------
FUNCTION: LIST      (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
JOB: NAMEA      SCHID: 1    SCAL:   ROLL: F   INDEX: 000
           DOTM LDTM SBTM
           2100 0030

__ __ DAILY
__ X __ WEEKLY    SUN:    MON:    TUE: X  WED:    THU: X  FRI:    SAT:

__   __ MONTHLY   JAN:    FEB:    MAR:    APR:    MAY:    JUN:
                  JUL:    AUG:    SEP:    OCT:    NOV:    DEC:
          WEEK:                   DAY-OF-WEEK:
          RDAY:

__   __ ANNUAL    DAY:

                                                        DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                     SCHID-COUNT: 001

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.1-E --   yy.ddd / hh:mm:ss
MESSAGE: LIST FUNCTION SUCCESSFUL
```

We will change this screen to tell CA-7 to run NAMEA on Mondays under schedule ID 2. To do this, change the following fields:

FUNCTION: Change LIST to **ADD.**

SCHID: Change 1 to **2.**

ROLL: Change F to **N.** This tells CA-7 to run NAMEA on Mondays even if Monday is a holiday.

LDTM Change 0030 to **0040** since NAMEA takes a little longer to run on Mondays.

WEEKLY Leave the X in this field but add an **X** after Monday and erase the Xs after TUE and THU.

Press Enter and watch for the ADD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
------------------  CA-7 CPU JOB SCHEDULING PARAMETER EDIT  ------------------
FUNCTION: ADD       (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
JOB: NAMEA      SCHID: 2    SCAL:   ROLL: N   INDEX: 000
           DOTM LDTM SBTM
           2100 0040


__ __ DAILY
__ X __ WEEKLY    SUN:    MON: X  TUE:    WED:    THU:    FRI:    SAT:

__   __ MONTHLY   JAN:    FEB:    MAR:    APR:    MAY:    JUN:
                  JUL:    AUG:    SEP:    OCT:    NOV:    DEC:
          WEEK:                   DAY-OF-WEEK:
          RDAY:

__   __ ANNUAL    DAY:                                          DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                            SCHID-COUNT: 002

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.1-E --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL
```

Now the NAMEA scheduling record is expanded to include another scheduling variation. To replace the original scheduling record with the expanded record, type **SR** (for save/replace) after FUNCTION and press Enter. This returns you to the CPU Job Scheduling screen:

```
-------------------------  CA-7 CPU JOB SCHEDULING  --------------------------
FUNCTION: REPL      (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)

JOB: NAMEA


SCAL:  5D  (DEFAULT SCAL ID FOR ADDS)



SCHID-COUNT: 002



PROGRAM: SM71   MSG-INDX: 00   -- DB.2.1   --   yy.ddd / hh:mm:ss
MESSAGE: REPL FUNCTION SUCCESSFUL FOR SJnnnnnn
         SCHEDULE MUST BE RESOLVED
```

See how the schedule ID count is now set to 2? This indicates that NAMEA has two scheduling variations.

3.4.1 Resolving the Revised Schedule

The next step is to resolve the schedule again to include the days defined under schedule ID 2. To do this, type **RESOLV** in the FUNCTION field again and press Enter.

This time the output screens you see will describe schedule ID 2 after schedule ID 1. They will look something like the following screens.

Note: If you are resolving jobs during the July-December time frame and the next year calendar has not been defined, then you will receive a message that says SCALxxyy not found (with the yy being the next year). If you receive this message, then move the cursor to the end of the command which remains at the top of the screen and type **,YEAR=yy** where **yy** is the current year. Press Enter.

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                  TIME hh:mm:ss                    PAGE NO. 0001
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

0001 SCHEDULES SELECTED FOR RESOLUTION

*****SCHEDULE RESOLUTION STARTED FOR SJnnnnnn JOB=NAMEA
**SCHEDULE DATA :
   ID=001   ROLL=F  INDEX=+000
   SCAL=    DOTM=2100  LEADTM=0030  STARTM=2030
            WEEKLY    DAY=TUE,THU
**SCHEDULE DAYS ROLL STARTED : ROLL=F
SRC1-113 JAN 01 (DAY# 001) ROLLED FORWARD TO JAN 02 (DAY# 002)
SRC1-113 JUL 04 (DAY# 185) ROLLED FORWARD TO JUL 05 (DAY# 186)
**SCHEDULE DAYS ROLL COMPLETED
**SCHEDULE DATA :
   ID=002   ROLL=N  INDEX=+000
   SCAL=    DOTM=2100  LEADTM=0040  STARTM=2020
            WEEKLY    DAY=MON
**SCHEDULE DAYS ROLL STARTED : ROLL=N
```

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                  TIME hh:mm:ss                    PAGE NO. 0002
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

         FEB 18 (DAY# 049) FALLS ON A NON-SCHEDULE DAY : SCHEDULE DAY RETAINED
         MAY 27 (DAY# 147) FALLS ON A NON-SCHEDULE DAY : SCHEDULE DAY RETAINED
         SEP 02 (DAY# 245) FALLS ON A NON-SCHEDULE DAY : SCHEDULE DAY RETAINED
         OCT 14 (DAY# 287) FALLS ON A NON-SCHEDULE DAY : SCHEDULE DAY RETAINED
**SCHEDULE DAYS ROLL COMPLETED
*****SCHEDULE RESOLUTION COMPLETED FOR SJnnnnnn
               SCAL=915D JOB=NAMEA
```

Keep scrolling until you get to the calendars. Our sample calendar shows you that Monday has been added to Tuesday and Thursday as the regular processing days for NAMEA. These calendars do not distinguish between schedule IDs; they show all the days NAMEA will be scheduled:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,JOB=NAMEA,YEAR=91
                  CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                  TIME hh:mm:ss                     PAGE NO. 0003
OPTIONS: YEAR=91    SCAL=5D JOB=NAMEA
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

*******************************************************************************
*                  CA-7 SCHEDULE CALENDAR FOR      SJnnnnnn                   *
*                                DATE yyddd                                   *
*  BASE CALENDAR SCAL915D  (DEFAULT)                                          *
*******************************************************************************
*                                MONTH 01 JAN                                 *
*             SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                       02      03                           *
*                      07      08              10                           *
*                      14      15              17                           *
*                      21      22              24                           *
*                      28      29              31                           *
*******************************************************************************
```

```
*                                MONTH 02 FEB                                 *
*             SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                                                             *
*                      04      05              07                           *
*                      11      12              14                           *
*                      18      19              21                           *
*                      25      26              28                           *
*******************************************************************************
```

3.4.2 Checking Schedule IDs

Before going on, make sure that two schedule IDs have been defined for NAMEA. To list all defined schedule IDs, type this command on the top line of your screen:

LJOB,JOB=NAMEA,LIST=SCHD

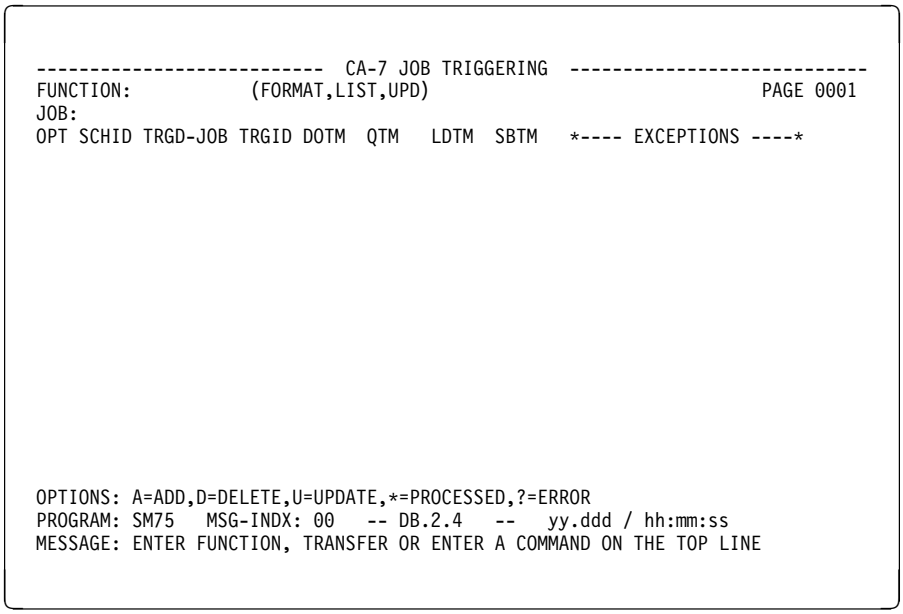
When you press Enter, this screen is displayed:

```
LJOB,JOB=NAMEA,LIST=SCHD
JOB=NAMEA    LIST=SCHD                                    DATE=yy.ddd    PAGE 0001

  JOB    ----JCL----   SYSTEM  USR MAIN PROSE  SCHED  --NUMBER OF-   LAST-RUN
  NAME    ID  MEMBER   -NAME-  -ID -ID- DSNBR  DSNBR  STP DDS RUNS   DATE/TIME

NAMEA    000 NAMEA    YOURNAME 000 ALL  *NONE* nnnnnn 000 000 0000  00000/0000

       ------------------------------ SCHEDULES -------------------------------
                        CALENDAR SCAL915D
       ID=001   ROLL=F  INDEX=+000
       SCAL=    DOTM=2100  LEADTM=0030  STARTM=2030
                WEEKLY    DAY=TUE,THU
       ID=002   ROLL=N  INDEX=+000
       SCAL=    DOTM=2100  LEADTM=0040  STARTM=2020
                WEEKLY    DAY=MON

SLIA-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

The middle of this screen shows all schedules that have been defined for NAMEA. In this case there are two: schedule ID 1 and schedule ID 2.

3.5 Triggering Other Jobs

We will now use schedule ID 2 to tell CA-7 to run NAMED after NAMEA on Mondays. We will do this by returning to the Job Triggering screen for NAMEA and adding NAMED to it. Type **DB.2.4**. When you press Enter, the Job Triggering screen is displayed again:



To display the jobs that are currently triggered by NAMEA, type **LIST** in the FUNCTION field and **NAMEA** in the JOB field.

When you press Enter, the NAMEA triggering record is displayed:

```
--------------------------  CA-7 JOB TRIGGERING  ---------------------------
FUNCTION: LIST      (FORMAT,LIST,UPD)                            PAGE 0001
JOB:  NAMEA
OPT SCHID TRGD-JOB TRGID DOTM  QTM   LDTM  SBTM   *---- EXCEPTIONS ----*
     001  NAMEB               0030  0030




OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM75   MSG-INDX: 00   -- DB.2.4   --   yy.ddd / hh:mm:ss
MESSAGE: LIST FUNCTION SUCCESSFUL
         END OF DATA REACHED
```

To trigger NAMED from NAMEA on Mondays, fill in these fields:

FUNCTION: Change LIST to **UPD.**

OPT Tab down to the line below NAMEB and type **A** under OPT.

SCHID Type **2** since we want to trigger NAMED on Mondays when NAMEA runs under schedule ID 2.

TRGD-JOB Identify the job that is to run after NAMEA under schedule ID 2: **NAMED**.

QTM Specify **15** to indicate that NAMED will be late if it has to wait more than 15 minutes before it starts processing.

LDTM Assume that NAMED takes one hour to process (0100).

When these fields are filled in, press Enter and watch for the UPD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
--------------------------  CA-7 JOB TRIGGERING  ----------------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
JOB:  NAMEA
OPT SCHID TRGD-JOB TRGID DOTM  QTM   LDTM  SBTM   *---- EXCEPTIONS ----*
     001  NAMEB               0030  0030
 *   002  NAMED     000       0010  0100









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM75   MSG-INDX: 00   -- DB.2.4   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

The time entries for NAMED are displayed:

- The 15 minutes you specified for QTM is automatically rounded down to 10 minutes.

From now on, whenever NAMEA ends successfully on Monday (when it runs under schedule ID 2) NAMED will be scheduled.

3.6 Other Scheduling Methods

This chapter showed you two ways to schedule a job to run automatically:

- You can use the CPU Job Scheduling screen and calendars to tell CA-7 to schedule it on certain days.
- You can use the Job Triggering screens to tell CA-7 to schedule it whenever another job ends successfully. (You can also trigger jobs from the creation of a data set or the completion of an input network, but these techniques will not be illustrated in this *CA-7 Primer*.)

In addition to scheduling jobs to run automatically, you can run them on request by issuing DEMAND or RUN commands. This is illustrated on 9.1, “Running Jobs By Request” on page 9-2.

All of these scheduling methods are described in detail in the *CA-7 Database Maintenance Guide*.

Chapter 4. Adding Requirements to Jobs

This chapter shows you how to ensure that jobs run in order by adding predecessor requirements to them. Also shows you how to prevent two jobs from running at the same time.

4.1 Defining a Predecessor

We learned in the last chapter how to make sure that jobs run in the right order by triggering one job from another. We triggered NAMED from NAMEA to ensure that NAMED does not run until NAMEA ends successfully.

But what if another job, NAMEC, also provides input to NAMED? To ensure that NAMED runs with the right input, it must **also** wait for NAMEC to end successfully.

We can define this relationship to CA-7 by defining NAMEC as a *requirement* which must be satisfied before NAMED can run. Since NAMEC must *precede* NAMED, it is a *predecessor* requirement. We will see how to define NAMEC as a predecessor to NAMED on the following pages.

Start by typing **DB** on any CA-7 screen to display the Data Base Maintenance Menu:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
               ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT



PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

Type **3** in the FUNCTION field of the Data Base Maintenance Menu to define a predecessor. When you press Enter, the Job Predecessor/Successor Menu is displayed:

```
-------------------  CA-7 JOB PREDECESSOR/SUCCESSOR MENU  -------------------
FUNCTION ===>


EXECUTION REQUIREMENTS DEFINED BY:
   1 - DATA SET PREDECESSORS
   2 - CPU JOB PREDECESSORS
       MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
   4 - INPUT NETWORK PREDECESSORS
       OUTPUT NETWORK SUCCESSORS
   6 - USER MEMO-FORM PREDECESSORS
   7 - REPORT IDS CREATED









PROGRAM: SM60   MSG-INDX: 00   -- DB.3     --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Type **2** in the FUNCTION field of the Job Predecessor/Successor Menu to define the predecessor for a CPU job.

When you press Enter, the CPU Job Predecessors screen is displayed:

```
------------------------  CA-7 CPU JOB PREDECESSORS  -------------------------
FUNCTION:           (FORMAT,LIST,UPD)                              PAGE 0001
PRED FOR JOB:                                LIST-SCHID:
OPT SCHID LEADTM    PRED-JOB  NEXT-RUN









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.2   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Fill in this screen as follows:

FUNCTION: Type **UPD**.

PRED FOR JOB:
Identify **NAMED** since this is the job that must run after a predecessor.

OPT Type **A** under OPT.

LEADTM Type **6** to tell CA-7 that NAMEC must have run within the last six hours to satisfy the requirement that it run before NAMED. (This ensures that only a recent run of NAMEC satisfies the requirement, not an old run.)

PRED-JOB Identify **NAMEC** since this is the predecessor (the job that must run before NAMED can run).

When you press Enter, you should see the UPD FUNCTION SUCCESSFUL at the bottom of your screen, like this:

```
------------------------  CA-7 CPU JOB PREDECESSORS  -------------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
PRED FOR JOB: NAMED                          LIST-SCHID:
OPT SCHID LEADTM    PRED-JOB  NEXT-RUN
 *   0     0006     NAMEC        YES









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.2   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

From now on NAMED will not be submitted unless NAMEC has started and ended within the last six hours (and has run since the last time NAMED ran).

4.2 Preventing Jobs From Running Together

We can also use the same screen to tell CA-7 not to run two jobs at the same time. For example, assume that NAMEE has been scheduled around the same time as NAMED, but we do not want it to run at the same time as NAMED because they update the same data set. Define this to CA-7 by using these fields on the same screen:

FUNCTION: Retype the **U** in UPD.

OPT Tab down to the first blank line under these headings and type another **A** under OPT.

PRED-JOB Identify **NAMEE** as being *mutually exclusive* with NAMED by typing its name preceded by a slash, like this: **/NAMEE**.

When you press Enter, the screen will look like this:

```
------------------------  CA-7 CPU JOB PREDECESSORS  -------------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
PRED FOR JOB: NAMED                          LIST-SCHID:
OPT SCHID LEADTM    PRED-JOB  NEXT-RUN
 *   0     0006     NAMEC        YES
 *   0     0000     /NAMEE       YES









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.2   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

Mutual exclusion has to be defined both ways, so now we have to complete the same definition for NAMEE. We can do this on the same screen. First type **FORMAT** in the FUNCTION field and press Enter to clear the screen. Then fill in the fields as follows:

FUNCTION: Type **UPD**.

PRED FOR JOB:
Type **NAMEE**.

OPT Tab down to the first line and type **A.**

PRED-JOB Identify **NAMED** as being mutually exclusive with NAMEE by typing its name preceded by a slash, like this: **/NAMED.**

When you press Enter, the screen will look like this:

```
------------------------  CA-7 CPU JOB PREDECESSORS  -------------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
PRED FOR JOB: NAMEE                        LIST-SCHID:
OPT SCHID LEADTM    PRED-JOB  NEXT-RUN
 *   0     0000     /NAMED       YES









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.2   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

Now if NAMED and NAMEE are both ready to be submitted at the same time, CA-7 will make one job wait until the other job ends successfully.

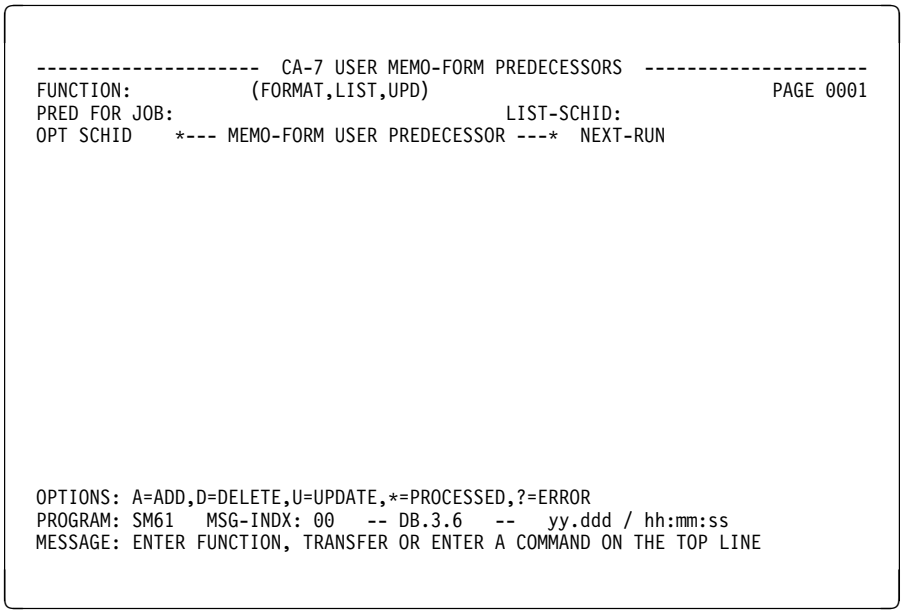
4.3 Defining a Manual Predecessor

Not all predecessors are CPU jobs. Sometimes a job has to wait to run until a manual task is performed: a tape is received, output is checked, or someone verifies that the input is complete. All of these conditions can be defined to CA-7 on the User Memo-Form Predecessors screen. CA-7 then waits for someone to indicate that the manual task is performed before it allows the job to run.

To display the User Memo-Form Predecessors screen, follow these steps:

1. Type **DB.3** to display the Job Predecessor/Successor Menu again.
2. Type **6** in the FUNCTION field to display the User Memo-Form Predecessors screen.

This screen is displayed:



Now assume that we also have to check with a programmer before running NAMED. Here is how to define that to CA-7:

FUNCTION: Type **UPD**.

PRED FOR JOB: Identify **NAMED** since this is the job that has a requirement.

OPT Type **A** under OPT to add a requirement to NAMED.

MEMO-FORM ... State the manual requirement that must be satisfied before NAMED can run: **CALL DAVE AT X234 BEFORE RUNNING.**

When you press Enter, you should see the UPD FUNCTION SUCCESSFUL at the bottom of your screen, like this:

```
---------------------  CA-7 USER MEMO-FORM PREDECESSORS  ---------------------
FUNCTION: UPD      (FORMAT,LIST,UPD)                                PAGE 0001
PRED FOR JOB: NAMED                        LIST-SCHID:
OPT SCHID    *--- MEMO-FORM USER PREDECESSOR ---*  NEXT-RUN
 *   0      CALL DAVE AT X234 BEFORE RUNNING.       YES













OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.6   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

Now in addition to its other requirements, NAMED will not be submitted until someone satisfies this manual requirement. (We will see on 9-8 how this is done.)

4.4 Displaying Requirements

Before finishing this chapter, display all the requirements for NAMED to make sure we have defined them correctly. To display requirements, type this command on the top line of your screen:

LJOB,JOB=NAMED,LIST=RQMT

When you press Enter, a screen like this is displayed:

```
LJOB,JOB=NAMED,LIST=RQMT
JOB=NAMED    LIST=RQMT                                  DATE=yy.ddd    PAGE 0001

  JOB    ----JCL----   SYSTEM  USR MAIN PROSE  SCHED  --NUMBER OF-   LAST-RUN
  NAME    ID  MEMBER   -NAME-  -ID -ID- DSNBR  DSNBR  STP DDS RUNS   DATE/TIME

NAMED    000 NAMED    PRIMER   000 ALL  *NONE* *NONE* 000 000 0000  00000/0000

       ---------------- REQUIREMENTS AND NETWORK CONNECTIONS -----------------
       JOB=NAMEC           SCHID=000   VRSN=99065/1617   LEADTM=06
       JOB=/NAMEE          SCHID=000   VRSN=99065/1618
       USR=CALL DAVE AT X234 BEFORE RUNNING.
                           SCHID=000

SLIA-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

You can see from the list of requirements that NAMED has two job requirements:

- NAMEC must have run within 6 hours before NAMED is scheduled or must run while NAMED is in the queues waiting to be submitted.
- NAMED cannot run at the same time as NAMEE.

It also has one user requirement: to check with Dave before running the job.

4.5 Connecting Resources to Jobs

The Virtual Resource Management (VRM) facility allows you to control job submission based on resource availability. A job to resource connection can be defined using VRM which establishes resource utilization at the job level. The resource can be a data set, started task, or any virtual resource name. During the job submission process, the resource availability and the job to resource relationship determine the eligibility of the job to be submitted.

```
-------------------- CA-7 VIRTUAL RESOURCE MANAGEMENT MENU -------------------
FUNCTION ==>

RESOURCE MANAGEMENT OPTIONS:

   1 - JOB RESOURCE MANAGEMENT
   2 - JOB RESOURCE CROSS REFERENCE LIST
   3 - ACTIVE JOB RESOURCES DISPLAY
   4 - PENDING RESOURCES JOB DISPLAY
   5 - JOBS WAITING ON RESOURCES DISPLAY
   6 - COREQUISITE RESOURCES LIST
   7 - RESOURCE COUNT RESOURCE MANAGEMENT




PROGRAM: RSC0   MSG-INDX: 00   -- RM       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

The VRM facility provides the following features:

- Resource control at the system, job, or step level.
- Job submission control for jobs that use shared or exclusive resources.
- Job corequisite requirements that may exist internally or externally to CA-7.
- Resource count resources which control job submission based on the availability of a total number of a predefined resource count occurrences for this resource.

Resource Utilization Types:

- Shared
- Exclusive
- Corequisite
- Address space
- Resource count resources

For detailed information about Virtual Resource Management, refer to the *CA-7 Database Maintenance Guide*.

Chapter 5. Scheduling Non-CPU Tasks

Not all of the tasks in your data center are computer jobs. Often various input tasks have to be performed before a job is run on the CPU; other tasks have to be performed after the job ends on the CPU. CA-7 allows you to schedule these tasks too.

Non-CPU tasks are grouped together and defined to CA-7 as *networks:*

- Tasks performed before a job is run on the CPU (preprocessing tasks) make up an *input network.* For example, a number of different data entry tasks can be grouped together into an input network called DATAPREP.
- Tasks performed after a job is run on the CPU (postprocessing tasks) make up an *output network.* For example, all the tasks required to decollate, burst, and distribute reports can be grouped together into an output network called REPORTS. Other tasks performed on checks can make up an output network called CHEKPREP.

Once these networks have been defined to CA-7, it is possible to associate them with one or more computer jobs

- either as *predecessors* if they are performed before the job runs on the computer
- or as *successors* if they are performed after the job runs on the computer.

For example, we will assume that NAMEE is a payroll job which requires both of the data entry tasks in the DATAPREP input network. The paychecks it prints also require processing by the CHEKPREP output network. (NAMEE could have more than one of each type of network, but we are going to assume that it only requires one of each.)

This chapter shows you how to define and schedule these two networks and associate them with NAMEE.

5.1 Defining Networks

5.1.1 For Input Tasks

The first step is to define each network. To do this, type **DB** on any CA-7 screen to display the Data Base Maintenance Menu:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
                ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT



PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

Type **5** in the FUNCTION field.

When you press Enter, the Input/Output Network Definition screen is displayed:

```
------------------  CA-7 INPUT/OUTPUT NETWORK DEFINITION  --------------------
FUNCTION:           (ADD,DELETE,FORMAT,LIST,UPD)

NETWORK:            TYPE:
SUB-ID:             JOB:            SCHD PROSE:

STATION 1:
STATION 2:
STATION 3:
STATION 4:
STATION 5:
STATION 6:
STATION 7:
STATION 8:
STATION 9:




PROGRAM: SM40   MSG-INDX: 00   -- DB.5     --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

We will use this screen first to define the input network:

Fill in this screen as follows:

FUNCTION: Type **ADD**.

NETWORK: Give the name of the input network: **DATAPREP**

TYPE: Type **INPUT** to indicate that the tasks in this network must be performed before a job runs on the CPU.

STATION 1: Identify the workstation where the data entry will be performed. Call it **DATAENT**.

STATION 2: Identify the workstation where the data will be verified. Call it **VERIFY**.

When you press Enter, you should see the ADD FUNCTION SUCCESSFUL message at the bottom of your screen, like this:

```
------------------  CA-7 INPUT/OUTPUT NETWORK DEFINITION  --------------------
FUNCTION: ADD       (ADD,DELETE,FORMAT,LIST,UPD)

NETWORK: DATAPREP   TYPE: INPUT
SUB-ID:             JOB:            SCHD PROSE:

STATION 1: DATAENT
STATION 2: VERIFY
STATION 3:
STATION 4:
STATION 5:
STATION 6:
STATION 7:
STATION 8:
STATION 9:




PROGRAM: SM40   MSG-INDX: 00   -- DB.5     --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL FOR NWnnnnnn
```

5.1.2 For Output Tasks

Now we will use this same screen to define the output network. Change the fields on this screen as follows:

FUNCTION: Retype the **A**.

NETWORK: Change the name of the network to **CHEKPREP**.

TYPE: Change INPUT to **OUTPUT** to indicate that the tasks in this network must be performed after a job runs on the CPU.

STATION 1: Identify the workstation where the checks are signed. Call it **SIGNCHKS**.

STATION 2: This output network only has one workstation, so erase VERIFY and leave this field blank.

When you press Enter, you should see the ADD FUNCTION SUCCESSFUL message at the bottom of your screen, like this:

```
------------------  CA-7 INPUT/OUTPUT NETWORK DEFINITION  --------------------
FUNCTION: ADD       (ADD,DELETE,FORMAT,LIST,UPD)

NETWORK: CHEKPREP   TYPE: OUTPUT
SUB-ID:             JOB:            SCHD PROSE:

STATION 1: SIGNCHKS
STATION 2:
STATION 3:
STATION 4:
STATION 5:
STATION 6:
STATION 7:
STATION 8:
STATION 9:




PROGRAM: SM40   MSG-INDX: 00   -- DB.5     --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL FOR NWnnnnnn
```

5.2 Scheduling the Networks

5.2.1 Input Network

Networks must be scheduled, just like jobs. To see how to schedule a network, type **DB.2** in the FUNCTION field to display the Scheduling Menu again:

```
--------------------------  CA-7 SCHEDULING MENU  ---------------------------
FUNCTION ===>


DATE/TIME SCHEDULING FOR:
   1 - CPU JOB
   2 - INPUT NETWORK
   3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
   4 - JOB TRIGGERING OTHER CPU JOB(S)
   5 - INPUT NETWORK TRIGGERING CPU JOB(S)
   6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
   7 - MODIFICATION TO RESOLVED SCHEDULE DATES
   8 - BASE CALENDAR MAINTENANCE



PROGRAM: SM70   MSG-INDX: 00   -- DB.2     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

This time, type **2** in the FUNCTION field to select scheduling for input networks.

When you press Enter, the Input Network Scheduling screen is displayed:

```
----------------------  CA-7 INPUT NETWORK SCHEDULING  -----------------------
FUNCTION:           (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)


NETWORK:

SCAL:      (DEFAULT SCAL ID FOR ADDS)



SCHID-COUNT: 000









PROGRAM: SM71   MSG-INDX: 00   -- DB.2.2   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

To schedule the input network we just defined, fill in the following fields:

FUNCTION: Type **EDIT** to define scheduling information.

NETWORK: Type **DATAPREP** to identify the network.

SCAL: Give the 2-character name of the calendar you are using. For example, we have been using **5D**.

Press Enter.

This edit screen is displayed. We will use it to tell CA-7 that we want to schedule the input network two days before payday, which is the 15th of the month.

```
---------------  CA-7 INPUT NETWORK SCHEDULING PARAMETER EDIT  ---------------
FUNCTION:           (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
NWK: DATAPREP   SCHID:      SCAL:   ROLL:     INDEX:
  STATION  DOTM LDTM DODY    STATION  DOTM LDTM DODY
1 DATAENT                  2 VERIFY

__   __ DAILY
__   __ WEEKLY    SUN:    MON:    TUE:    WED:    THU:    FRI:    SAT:

__   __ MONTHLY   JAN:    FEB:    MAR:    APR:    MAY:    JUN:
                  JUL:    AUG:    SEP:    OCT:    NOV:    DEC:
          WEEK:                   DAY-OF-WEEK:
          RDAY:

__   __ ANNUAL    DAY:

                                                          DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                       SCHID-COUNT: 000

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.2-E --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Fill in the following fields:

FUNCTION: Type **ADD**.

SCHID: Type **1**.

ROLL: Type **B**. This rolls DATAPREP backward if payday falls on a weekend or holiday.

INDEX: Type **-2** to indicate that this network is to be scheduled two workdays before the date described on the rest of the screen.

DOTM Use your tab key to place the cursor under this field next to the name of the first workstation. (Station names are filled in for you.) Specify **1200** to indicate that the data entry tasks must be completed by noon.

LDTM Specify **300** to indicate that the data entry task takes around 3 hours.

DOTM Move your cursor under the DOTM field for station 2 and type **1600** to indicate that the data entry must be verified by 4:00 PM.

LDTM Specify **400** to indicate that you are allowing 4 hours for the verification task.

MONTHLY Tab down to this field and type an **X** to the left of the word MONTHLY.

RDAY Tab down to this field and type **15** since payday is the 15th of the month.

Press Enter and watch for the ADD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
---------------  CA-7 INPUT NETWORK SCHEDULING PARAMETER EDIT  ---------------
FUNCTION: ADD       (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
NWK: DATAPREP   SCHID: 1    SCAL:   ROLL: B   INDEX: -002
  STATION  DOTM LDTM DODY    STATION  DOTM LDTM DODY
1 DATAENT  1200 0300       2 VERIFY   1600 0400

__   __ DAILY
__   __ WEEKLY    SUN:    MON:    TUE:    WED:    THU:    FRI:    SAT:

__ X __ MONTHLY   JAN: X  FEB: X  MAR: X  APR: X  MAY: X  JUN: X
                  JUL: X  AUG: X  SEP: X  OCT: X  NOV: X  DEC: X
          WEEK:                   DAY-OF-WEEK:
          RDAY: 15

__   __ ANNUAL    DAY:

                                                          DEFAULT SCAL: 5D
__   __ SYMETRIC  START:       SPAN:                       SCHID-COUNT: 001

PROGRAM: SM72   MSG-INDX: 00   -- DB.2.2-E --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL
```

DATAPREP now has this schedule criteria:

- It will be scheduled two workdays before the 15th of every month (because we specified -2 in the INDEX field and 15 in the RDAY field). This will normally be the 13th of the month but could be the 11th or 12th, depending on the month. We will see how this works when we resolve the schedule.
- It will be scheduled at the data entry workstation at 9:00 AM so it can be done by noon.
- It will then be scheduled at the verification workstation so the data can be verified by 4:00 PM.

To save it, type **SS** after FUNCTION and press Enter.

This automatically returns you to the Input Network Scheduling screen:

```
----------------------  CA-7 INPUT NETWORK SCHEDULING  -----------------------
FUNCTION: SAVE      (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)


NETWORK: DATAPREP

SCAL:  5D  (DEFAULT SCAL ID FOR ADDS)



SCHID-COUNT: 001



PROGRAM: SM71   MSG-INDX: 00   -- DB.2.2   --   yy.ddd / hh:mm:ss
MESSAGE: SAVE FUNCTION SUCCESSFUL FOR SInnnnnn
         SCHEDULE MUST BE RESOLVED
```

Now type **RESOLV** in the FUNCTION field to resolve the schedule.

Note: If you are resolving jobs during the July-December time frame and the next year calendar has not been defined, then you will receive a message that says SCALxxyy not found (with the yy being the next year). If you receive this message, then move the cursor to the end of the command which remains at the top of the screen and type **,YEAR=yy** where **yy** is the current year. Press Enter.

The output screens you see will contain SCHEDULE DATA for network DATAPREP. Under this data, you will see the processing days that have to be moved backwards because they fall on holidays on your calendar. (The dates listed here are based on SCAL915D; your dates may be different.)

Press Enter to scroll through the output screens:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,NW=DATAPREP,YEAR=91
                  CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                    TIME hh:mm:ss                      PAGE NO. 0001
OPTIONS: YEAR=91    SCAL=5D NETWORK=NW.DATAPREP
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

0001 SCHEDULES SELECTED FOR RESOLUTION

*****SCHEDULE RESOLUTION STARTED FOR SInnnnnn NW=DATAPREP
**SCHEDULE DATA :
   ID=001   ROLL=B  INDEX=-002
   SCAL=    WKSTA=(01,DOTM=1200,LEADTM=0300,DAY=000)
            WKSTA=(02,DOTM=1600,LEADTM=0400,DAY=000)
            MONTHLY   RDAY=15  MONTH=ALL
**SCHEDULE DAYS ROLL STARTED : ROLL=B
SRC1-113 JUN 15 (DAY# 166) ROLLED BACKWARD TO JUN 14 (DAY# 165)
SRC1-113 SEP 15 (DAY# 258) ROLLED BACKWARD TO SEP 13 (DAY# 256)
SRC1-113 DEC 15 (DAY# 349) ROLLED BACKWARD TO DEC 13 (DAY# 347)
**SCHEDULE DAYS ROLL COMPLETED
**SCHEDULE DAYS ADJUSTMENT FOR INDEX DAY(S) STARTED : INDEX = -002 DAYS
**SCHEDULE DAYS ADJUSTMENT FOR INDEX DAY(S) COMPLETED
```

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,NW=DATAPREP,YEAR=91
                  CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                    TIME hh:mm:ss                      PAGE NO. 0002
OPTIONS: YEAR=91    SCAL=5D NETWORK=NW.DATAPREP
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO
*****SCHEDULE RESOLUTION COMPLETED FOR SInnnnnn
               SCAL=915D NW=DATAPREP
```

This screen shows when DATAPREP will be scheduled in January:

```
RESOLV,SCAL=5D,TEST=NO,PRINT=YES,OLDYR=*,NW=DATAPREP,YEAR=91
                  CA-7 SCHEDULE / BASE CALENDAR RESOLUTION
DATE yy.ddd                    TIME hh:mm:ss                    PAGE NO. 0003
OPTIONS: YEAR=91    SCAL=5D NETWORK=NW.DATAPREP
         OLDYR=*  TEST=NO  PRINT=YES  DUPDATE=NO

*******************************************************************************
*                  CA-7 SCHEDULE CALENDAR FOR      SInnnnnn                   *
*                                 DATE yyddd                                  *
*  BASE CALENDAR SCAL915D  (DEFAULT)                                          *
*******************************************************************************
*                                MONTH 01 JAN                                 *
*             SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                                                             *
*                                                      11                     *
*                                                                             *
*                                                                             *
*                                                                             *
*******************************************************************************
```

In our example, January 15 falls on a Tuesday. One workday before Tuesday is Monday, and one workday before Monday is Friday. Therefore, DATAPREP will be scheduled on Friday, January 11.

Scroll forward again to see February:

```
*******************************************************************************
*                              MONTH 02 FEB                                   *
*            SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                                                             *
*                                                                             *
*                                    13                                       *
*                                                                             *
*                                                                             *
*******************************************************************************
```

In our example, February 15 is a Friday. Therefore DATAPREP is scheduled on the 13th. Scroll forward four more times to display June's calendar:

```
*******************************************************************************
*                              MONTH 06 JUN                                   *
*            SUN     MON     TUE     WED     THU     FRI     SAT             *
*                                                                             *
*                                                                             *
*                                    12                                       *
*                                                                             *
*                                                                             *
*******************************************************************************
```

In our example, June 15 falls on a Saturday so payday is rolled backward one day to Friday. Therefore, DATAPREP is scheduled on Wednesday the 12th, which is two work-days before payday.

5.2.2 Output Network

Output networks are scheduled on the Output Network Scheduling screen. To display this screen, follow these steps:

1. Type **DB.2** on your current screen to return to the Scheduling Menu.
2. Type **3** in the FUNCTION field to display the scheduling screen for output networks:

```
----------------------  CA-7 OUTPUT NETWORK SCHEDULING  -----------------------
FUNCTION:           (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)


NETWORK:




SCHID-COUNT: 000









PROGRAM: SM71   MSG-INDX: 00   -- DB.2.3   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Fill in this screen as follows:

FUNCTION: Type **EDIT** to define scheduling information.

NETWORK: Type **CHEKPREP** to identify the network.

Did you notice that there is no SCAL field on this screen? That is because output networks are scheduled with their CPU jobs; therefore they do not have to be resolved against a calendar.

When you press Enter, this edit screen is displayed:

```
--------------  CA-7 OUTPUT NETWORK SCHEDULING PARAMETER EDIT  ---------------
FUNCTION:           (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
NWK: CHEKPREP   SCHID:
  STATION  DOTM LDTM DODY
1 SIGNCHKS



SCHID-COUNT: 000









PROGRAM: SM72   MSG-INDX: 00   -- DB.2.3-E --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Since the output network is scheduled when its CPU job is scheduled, this screen does not contain the usual scheduling criteria. We will use it to tell CA-7 how long the various tasks in the output network take and when they must be done. To do this, fill in the following fields:

FUNCTION: Type **ADD**.

SCHID: Type **1**.

DOTM Assume the checks must be signed by noon the day after the CPU job runs so they can be distributed on the 15th. Specify **1200**.

LDTM Specify **300** to give whoever signs the checks 3 hours to complete the task.

DODY Type **1** to indicate that these times are 1 day later than the times on the CPU job. (The CPU job will be scheduled to run the evening before. Therefore, 1 midnight will pass between the CPU job and the output network.)

When you press Enter, the screen looks like this:

```
--------------  CA-7 OUTPUT NETWORK SCHEDULING PARAMETER EDIT  ---------------
FUNCTION: ADD       (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)
NWK: CHEKPREP   SCHID: 1
  STATION  DOTM LDTM DODY
1 SIGNCHKS 1200 0300 0001


SCHID-COUNT: 001









PROGRAM: SM72   MSG-INDX: 00   -- DB.2.3-E --   yy.ddd / hh:mm:ss
MESSAGE: ADD FUNCTION SUCCESSFUL
```

Type **SS** to save these times. When you press Enter, you are returned to the Output Network Scheduling screen:

```
----------------------  CA-7 OUTPUT NETWORK SCHEDULING  -----------------------
FUNCTION: SAVE      (CLEAR,DELETE,EDIT,FE,FETCH,REPL,RESOLV,SAVE)


NETWORK: CHEKPREP



SCHID-COUNT: 001









PROGRAM: SM71   MSG-INDX: 00   -- DB.2.3   --   yy.ddd / hh:mm:ss
MESSAGE: SAVE FUNCTION SUCCESSFUL FOR SOnnnnnn
```

Since the output network is automatically scheduled when its CPU job is scheduled, it does not have to be resolved.

We now have an input network and an output network. The next step is to associate them with a CPU job that requires their services.

5.3 Defining the Input Network as a Predecessor

We do not want NAMEE to run on the CPU until its data entry and verification are complete. To keep this from happening, we can define the input network DATAPREP as a predecessor to NAMEE. This is done on the Input/Output Network Tasks screen. Here is how to display this screen:

1. Return to the main menu by typing **DB** on any screen.
2. When the menu is displayed, type **3** in the FUNCTION field to define a job predecessor or successor.
3. When the Job Predecessor/Successor Menu is displayed, type **4** in the FUNCTION field to define the input network as a predecessor.

When you press Enter, this screen is displayed:

```
---------------------  CA-7 INPUT/OUTPUT NETWORK TASKS  ----------------------
FUNCTION:           (FORMAT,LIST,UPD)                              PAGE 0001
TASK FOR JOB:                                 LIST-SCHID:
OPT SCHID LEADTM   NETWORK   SUB-ID   NWK-SCHID  DESCRIPTION NEXT-RUN









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.4   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

To define the input network as a predecessor for NAMEE, fill in the fields on this screen as follows:

FUNCTION: Type **UPD**.

TASK FOR JOB:
Identify **NAMEE**.

OPT Type **A** under OPT to add a requirement.

NETWORK Identify **DATAPREP**.

When these fields are filled in, press Enter and watch for the UPD FUNCTION SUCCESSFUL message at the bottom of the screen:

```
---------------------  CA-7 INPUT/OUTPUT NETWORK TASKS  ----------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                              PAGE 0001
TASK FOR JOB: NAMEE                          LIST-SCHID:
OPT SCHID LEADTM   NETWORK   SUB-ID   NWK-SCHID  DESCRIPTION NEXT-RUN
 *   0     0000    DATAPREP              0                      YES









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.4   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

DATAPREP is now defined as a requirement for NAMEE. Since DATAPREP is an input network and an input network must precede CPU processing, CA-7 knows that we want DATAPREP to be a predecessor to NAMEE. It will enforce this relationship for us by not letting NAMEE run on the computer until the people at the DATAENT and VERIFY workstations indicate that they have completed their tasks.

5.4 Defining the Output Network as a Successor

Before the payroll checks produced by NAMEE can be distributed, they have to be signed. To ensure that this manual task is scheduled at the same time that NAMEE is scheduled, we can define the CHEKPREP output network as another requirement for NAMEE. Since an output network follows CPU processing, CA-7 will assume it is a successor to the CPU job and will schedule it for processing at the same time as it schedules NAMEE at the CPU.

We define successor requirements on the Input/Output Network Tasks screen too. Since this screen is already displayed with the predecessor requirement, simply add these fields:

FUNCTION: Retype the **U**.

OPT Tab down to the blank line and type **A** to add another requirement.

NETWORK Identify **CHEKPREP**. Since CHEKPREP is an output network, CA-7 knows it is a successor to NAMEE.

NWK-SCHID Type **1** since this is the schedule ID for CHEKPREP.

When you press Enter, you should see the UPD FUNCTION SUCCESSFUL message at the bottom of your screen, like this:

```
---------------------  CA-7 INPUT/OUTPUT NETWORK TASKS  ----------------------
FUNCTION: UPD       (FORMAT,LIST,UPD)                                PAGE 0001
TASK FOR JOB: NAMEE                          LIST-SCHID:
OPT SCHID LEADTM   NETWORK   SUB-ID   NWK-SCHID  DESCRIPTION NEXT-RUN
 *   0     0000    DATAPREP             0                     YES
 *   0     0000    CHEKPREP             1                     YES









OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61   MSG-INDX: 00   -- DB.3.4   --   yy.ddd / hh:mm:ss
MESSAGE: UPD FUNCTION SUCCESSFUL
         ENTER INPUT FOR NEXT REQUEST
```

From now on, whenever NAMEE is scheduled for processing, the CHEKPREP network will be scheduled too.

5.5 Displaying Network Data

To display all jobs that have input network DATAPREP as a predecessor, type this command on the top line of your screen:

LNTWK,NW=DATAPREP,LIST=USERS

When you press Enter, this screen is displayed:

```
LNTWK,NW=DATAPREP,LIST=USERS
LIST=USERS   DSN=NW.DATAPREP                              DATE=yy.ddd    PAGE 0001

*------- NETWORK ------*   SCHED    PROSE   NUMBER  LAST MAINTENANCE   NETWORK
  NAME    DSNBR    TYPE    DSNBR    DSNBR   ST JOB YYDDD/HHMMSS TYPE-   SUBID

DATAPREP NWnnnnnn  INPUT  SInnnnnn  *NONE*  02 001 yyddd/hhmmss DBM

       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss VIA DBM  BY OPERATOR: xxxxxx

       ---------------------- NETWORK/JOB CROSS REFERENCE ----------------------
       JOB=NAMEE    NUMBER OF TIMES USED=01


SLIH-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

This screen shows that the only job that uses the DATAPREP input network so far is NAMEE, but many jobs can use the same input network.

To display all jobs that have output network CHEKPREP as a successor, change the command on the top line of your screen from DATAPREP to **CHEKPREP** , like this:

LNTWK,NW=CHEKPREP,LIST=USERS

When you press Enter, this screen is displayed:

```
LNTWK,NW=CHEKPREP,LIST=USERS
LIST=USERS   DSN=NW.CHEKPREP                              DATE=yy.ddd    PAGE 0001

*------- NETWORK ------*   SCHED    PROSE   NUMBER  LAST MAINTENANCE   NETWORK
  NAME    DSNBR    TYPE    DSNBR    DSNBR   ST JOB YYDDD/HHMMSS TYPE-   SUBID

CHEKPREP NWnnnnnn  OUTPT  SOnnnnnn  *NONE*  01 001 yyddd/hhmmss DBM

       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss VIA DBM  BY OPERATOR: xxxxxx

       ---------------------- NETWORK/JOB CROSS REFERENCE ----------------------
       JOB=NAMEE    NUMBER OF TIMES USED=01


SLIH-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

This screen shows that the only job that uses the CHEKPREP output network so far is NAMEE, but, again, many jobs can use the same output network.

To display the relationship between NAMEE and its networks, type this command on the top line of your screen:

LJOB,JOB=NAMEE,LIST=RQMT

When you press Enter, this screen is displayed:

```
LJOB,JOB=NAMEE,LIST=RQMT
JOB=NAMEE     LIST=RQMT                                DATE=yy.ddd    PAGE 0001

  JOB    ----JCL----   SYSTEM  USR MAIN PROSE  SCHED  --NUMBER OF-   LAST-RUN
  NAME    ID  MEMBER   -NAME-  -ID -ID- DSNBR  DSNBR  STP DDS RUNS   DATE/TIME

NAMEE    000 NAMEE    PRIMER   000 ALL  *NONE* *NONE* 000 000 0000  00000/0000


       ---------------- REQUIREMENTS AND NETWORK CONNECTIONS -----------------
       JOB=/NAMED          SCHID=000   VRSN=99065/1619
       NWK=DATAPREP        SCHID=000   NWKSCHID=000      LEADTM=0000
           NWNBR=NWnnnnnn  SUBID=                           **  INPUT **
       NWK=CHEKPREP        SCHID=000   NWKSCHID=001      LEADTM=0000
           NWNBR=NWnnnnnn                                   ** OUTPUT **

SLIA-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

It lists both the input network DATAPREP and the output network CHEKPREP as requirements for NAMEE.

Chapter 6. Checking Schedule Definitions

This chapter tells you how to use various CA-7 commands to see when jobs will run, when workstations will be scheduled, and how jobs are triggered.

6.1 Seeing When Jobs Will Run

When we learned how to resolve a schedule, the output screen on 3-12 showed us the exact dates the job would run. We can see the same kind of display at any time for any job. Type this command on the top line of any screen, with the name of the job you want to see:

LSCHD,LIST=CALS,JOB=NAMEA

When you press Enter, you will see a screen like this:

```
LSCHD,LIST=CALS,JOB=NAMEA
LIST=CALS JOB=NAMEA                                    DATE=yy.ddd    PAGE 0001

  JOB      SYSTEM   SCHEDULE #SCH  -BASE CALENDAR-   PROSE      COMMENTS
  NAME      NAME     NUMBER   IDS   USERID  B-DATE    NUM


NAMEA     PRIMER    SJnnnnnn  002  SCAL995D  99001   *NONE*   JANUARY SCHEDULE
       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss VIA DBM  BY OPERATOR: USERX
       ------------------------------ SCHEDULES -------------------------------
       ID=001   ROLL=F  INDEX=+000
       SCAL=    DOTM=2100  LEADTM=0030  STARTM=2030
                WEEKLY    DAY=TUE,THU
       ID=002   ROLL=N  INDEX=+000
       SCAL=    DOTM=2100  LEADTM=0040  STARTM=2020
                WEEKLY    DAY=MON
       -------------------------- TRIGGERED JOBS ----------------------------
          JOB=NAMEB    SCHID=001      QTM=0030 LEADTM=0030 SUBMTM=0000
          JOB=NAMED    SCHID=002      QTM=0010 LEADTM=0100 SUBMTM=0000
```

It summarizes the scheduling and triggering information we defined for NAMEA.

Press Enter to scroll forward until you come to a screen that looks like this:

```
LSCHD,LIST=CALS,JOB=NAMEA
LIST=CALS JOB=NAMEA                                        DATE=yy.ddd    PAGE 0002

********************************************************************************
**             CA-7 SCHEDULE CALENDAR      FOR JOB=NAMEA                      **
**                                DATE yyddd                                    **
**  BASE CALENDAR SCAL995D  (DEFAULT)                                         **
********************************************************************************
**                                                                            **
**  MONTH 01                          JAN                                     **
**                                                                            **
**            SUN     MON     TUE     WED     THU     FRI     SAT            **
**                                                                            **
**                                      02      03                            **
**                     07      08              10                            **
**                     14      15              17                            **
**                     21      22              24                            **
**                     28      29              31                            **
**                                                                            **
********************************************************************************
```

It shows you the exact days in January when this job will run. To see the rest of the months, just continue to scroll forward as long as you want.

6.2 Seeing Which Jobs Will Run on Specific Days

Another way to see when jobs will run is to use the FJOB command to *forecast* scheduled jobs. The FJOB command lists all jobs that will be scheduled during a specified period of time. For example, assume that you want to see which jobs will be scheduled on January 2. Type this command on the top line of your screen:

FJOB,FROM=0102,SPAN=24

When you press Enter, you will see a screen like this:

```
FJOB,FROM=0102,SPAN=24
FJOB                                                    DATE mm-dd-yy  PAGE 0001
                            FORECAST FOR CA-7 JOBS
           PERIOD     : 01-02-yy AT 0000 HRS  TO  01-02-yy AT 2400 HRS

           JOB(S)     : ALL

           SYSTEM(S)  : ALL              JOBNET(S)  : ALL

           OPTIONS    : JOB-TRIGERRED JOBS INCLUDED
                        DSN-TRIGERRED JOBS NOT INCLUDED
                        CONNECTED OUTPUT NETWORKS NOT INCLUDED

           HIGHEST JOB DATE AND TIME     :  yy002/2130
           HIGHEST JOB NAME              :  NAMEB
```

Scroll to the next screen.

This screen lists the jobs that will be scheduled throughout the one day specified on the forecast command. (The contents of your screen will vary, depending on your database.)

```
FJOB,FROM=0102,SPAN=24
FJOB                                                  DATE mm-dd-yy  PAGE 0001
                            FORECAST FOR CA-7 JOBS
           PERIOD     : 01-02-yy AT 0000 HRS  TO 01-02-yy AT 2400 HRS

START DTTM  END DTTM     JOB      SYS      SCHED#  SID  TRIGGERING JOB/DSN RQMT
yy002/2100 yy002/2100  NAMEA    PRIMER    SJnnnnnn 001                      NOEX
yy002/2130 yy002/2130  NAMEB    PRIMER     LEV001  001  NAMEA              NOEX

SFC1-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

As you can see, you can use the FJOB command to see the next day's schedule, next week's schedule, the number of jobs scheduled for Christmas day, or a period of time in the past, like last Saturday's forecasted schedule.

6.3 Seeing Which Workstations Will Be Scheduled on Specific Days

You can also forecast the workload at workstations. Assume that you want to see which workstations will be scheduled on January 11. Type this command on the top line of your screen:

FSTN,FROM=0111,TO=0111

When you press Enter, you will see a screen like this:

```
FSTN,FROM=0111,TO=0111
FSTN                                                  DATE mm-dd-yy  PAGE 0001
                         FORECAST FOR CA-7 STATIONS
           PERIOD     : 01-11-yy AT 0000 HRS  TO  01-11-yy AT 2359 HRS

           STATION(S) : ALL

           NETWORK(S) : ALL

           OPTIONS    : JOB-TRIGERRED JOBS INCLUDED
                        DSN-TRIGERRED JOBS NOT INCLUDED
                        DETAILED STATION RECORDS PROVIDED


           HIGHEST STATION DATE AND TIME :  yy011/1600
           HIGHEST STATION NAME          :  VERIFY
```

Scroll to the next screen.

It lists the workstations that will be scheduled on January 11, with the times each one will be scheduled:

```
FSTN,FROM=0111,TO=0111
FSTN                                                    DATE mm-dd-yy  PAGE 0001
                          FORECAST FOR CA-7 STATIONS
           PERIOD     : 01-11-yy AT 0000 HRS  TO 01-11-yy AT 2359 HRS

  START DTTM    END DTTM  STN #/NAME NETWORK   SUBID    SCHED#  SID CONNJOB/SID
  yy011/0900   yy011/1200 1 DATAENT  DATAPREP          SInnnnnn 001
  yy011/1200   yy011/1600 2 VERIFY   DATAPREP          SInnnnnn 001

SFC1-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

6.4 Displaying Trigger Streams

In Chapter 3, we defined two different schedules for NAMEA:

- In the first schedule, NAMEA triggers NAMEB.
- In the second schedule, NAMEA triggers NAMED.

To make sure we have defined each schedule correctly, we can use the FSTRUC command to display the "structure" of each schedule. To display the first schedule, type this command on the top line of your screen:

FSTRUC,JOB=NAMEA,SCHID=1

When you press Enter, an output screen like this is displayed:

```
FSTRUC,JOB=NAMEA,SCHID=1
FSTRUC                                                DATE mm-dd-yy  PAGE 0001
                            FORECAST FOR CA-7 JOBS
           START TIME : mm-dd-yy AT hhmm HRS

           JOB(S)     : NAMEA

           SYSTEM(S)  : ALL              JOBNET(S)  : ALL

           OPTIONS    : BOTH JOB- AND DSN-TRIGERRED JOBS INCLUDED
                        CONNECTED OUTPUT NETWORKS NOT INCLUDED

           HIGHEST JOB DATE AND TIME     :  yyddd/hhmm
           HIGHEST JOB NAME              :  NAMEB
```

It contains general information about NAMEA, including the name of the last job it triggers when it runs under schedule ID 1.

Scroll forward to display this screen:

```
FSTRUC,JOB=NAMEA,SCHID=1
FSTRUC                                                  DATE mm-dd-yy  PAGE 0001
                        NETWORK STRUCTURE FOR CA-7 JOBS
           START TIME : mm-dd-yy AT hhmm HRS

LEV#      JOB NAME          SYS    START DTTM  END DTTM  TRIGGERING JOB/DSN/SID
--- NAMEA   ............ PRIMER    yyddd/hhmm yyddd/hhmm                    :001
001   NAMEB   .......... PRIMER    yyddd/hhmm yyddd/hhmm  NAMEA             :001

SFC1-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

The left side of this screen shows NAMEA at the top of a list and all of the jobs triggered from it indented under it\ In this example, the only job we have defined is NAMEB, but when CA-7 is in full production at your shop, you can use this command to check long lists of triggered jobs. It is also a good way to check triggering changes before putting them into production.

The right column identifies NAMEA as the trigger for NAMEB.

To display the second schedule, move the cursor to the end of the FSTRUC command and change SCHID=1 to **SCHID=2**. When you press Enter, these two screens are displayed:

```
FSTRUC,JOB=NAMEA,SCHID=2
FSTRUC                                                  DATE mm-dd-yy  PAGE 0001
                              FORECAST FOR CA-7 JOBS
           START TIME : mm-dd-yy AT hhmm HRS

           JOB(S)     : NAMEA

           SYSTEM(S)  : ALL              JOBNET(S)  : ALL

           OPTIONS    : BOTH JOB- AND DSN-TRIGERRED JOBS INCLUDED
                        CONNECTED OUTPUT NETWORKS NOT INCLUDED

           HIGHEST JOB DATE AND TIME     :  yyddd/hhmm
           HIGHEST JOB NAME              :  NAMED
```

```
FSTRUC,JOB=NAMEA,SCHID=2
FSTRUC                                                  DATE mm-dd-yy  PAGE 0001
                         NETWORK STRUCTURE FOR CA-7 JOBS
           START TIME : mm-dd-yy AT hhmm HRS

LEV#      JOB NAME          SYS    START DTTM  END DTTM  TRIGGERING JOB/DSN/SID
--- NAMEA   ............ PRIMER    yyddd/hhmm yyddd/hhmm                    :002
001   NAMED   .......... PRIMER    yyddd/hhmm yyddd/hhmm  NAMEA             :002

SFC1-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

Here NAMEA triggers NAMED, just as we intended it to.

Chapter 7. Adding Documentation

CA-7 allows you to define documentation for jobs, systems, networks, data sets, and DD statements. This documentation is free-form and almost unlimited, and can be used to store descriptions, instructions, or call lists.

The next few pages show you how to define documentation for the network we defined on 5-3.

7.1 Documenting Networks

Type **DB** on any CA-7 screen to display the Data Base Maintenance Menu:

```
---------------------  CA-7 DATA BASE MAINTENANCE MENU  ----------------------
FUNCTION ===>

DATA BASE DEFINITION FOR:
   1 - CPU JOB
   2 - SCHEDULING
   3 - JOB PREDECESSOR/SUCCESSOR
   4 - WORKLOAD DOCUMENTATION
   5 - INPUT/OUTPUT NETWORK
   6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
   7 - JCL LIBRARY MAINTENANCE
   8 - TEXT EDITOR
   9 - CLEAR THE TEXT EDITOR ACTIVE AREA
               ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT




PROGRAM: SDM0   MSG-INDX: 00   -- DB       --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE
```

Type **4** in the FUNCTION field of the Data Base Maintenance Menu to select workload documentation. When you press Enter, the Workload Documentation Menu is displayed:

```
---------------------  CA-7 WORKLOAD DOCUMENTATION MENU  ---------------------
FUNCTION ===>


DOCUMENTATION FOR:
   1 - CPU JOB
   2 - INPUT/OUTPUT NETWORK
   3 - USER-DEFINED ITEM
   4 - DATA SET
   5 - DD STATEMENT
   6 - APPLICATION SYSTEM









PROGRAM: SM10   MSG-INDX: 00   -- DB.4     --   yy.ddd / hh:mm:ss
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

Type **2** in the FUNCTION field of the documentation menu to select networks.

When you press Enter, the Input/Output Network Documentation screen is displayed:

```
----------------  CA-7 INPUT/OUTPUT NETWORK DOCUMENTATION  -----------------
FUNCTION:           (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


JOB:
SYSTEM:


NETWORK:

DESC:                                                  LINK:

STEP:           DDNAME:
REPORT-ID:
FORM:           TRAIN:     CARRIAGE:       COPIES:


ACTIVE SIZE: 0000


PROGRAM: SM11   MSG-INDX: 00   -- DB.4.2   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER INPUT DATA
```

Fill in this screen as follows:

FUNCTION: Type **CLEAR** and press Enter to make sure the work area is clear. Then type **EDIT**.

NETWORK: Identify the network you are documenting: **DATAPREP**.

When you press Enter, a blank input screen like this is displayed, unless you are using CA-7 under ISPF. (If you are using CA-7 under ISPF, an ISPF editor screen is displayed and you can use standard ISPF edit commands and techniques to enter your documentation.)

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
 PF                                              NOFILL I(010)




















      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
EDTK-15 EWF EMPTY.
```

Without moving the cursor, type the word **INSERT** on top of the PF, under the scale line at the top of the screen. When you press Enter, the screen is formatted with numbered lines, like this:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70---
+----8
00010

00020

00030

00040

00050

00060

00070

00080

00090

00100

*** INSERT MODE ***
EDTB-00  COMMAND PROCESSED.
```

Type your documentation on these lines. To illustrate how this works, type something on line 00010. Then move the cursor to line 00020 and type something on that line. When you are finished typing, press Enter.

Now your screen will look something like this, depending on what you typed:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
PF                                                NOFILL I(010)
00010 THIS INPUT NETWORK PREPARES THE DATA FOR THE PAYROLL JOB AND IS
00020 SCHEDULED TWO WORKDAYS BEFORE PAYDAY.









      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
```

To save your documentation, type **SS** over PF. (Under ISPF, type **CA7SS**.) When you press Enter, you are returned to the Input/Output Network Documentation screen, which now looks like this:

```
----------------  CA-7 INPUT/OUTPUT NETWORK DOCUMENTATION  -----------------
FUNCTION: SAVE      (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


JOB:
SYSTEM:


NETWORK: DATAPREP

DESC:                                                  LINK: 0

STEP:           DDNAME:
REPORT-ID:
FORM:           TRAIN:     CARRIAGE:       COPIES: 0


ACTIVE SIZE: 0002


PROGRAM: SM11   MSG-INDX: 00   -- DB.4.2   --   yy.ddd / hh:mm:ss
MESSAGE: SAVE FUNCTION SUCCESSFUL FOR PPnnnnnn
```

The ACTIVE SIZE field near the bottom of the screen tells you how many lines of documentation were entered for this network. In this example, it was 2 lines.

7.2 Displaying the Documentation

To display the documentation you just entered, type the following command on the top line of your screen:

LPROS,NW=DATAPREP

This output screen is displayed with your network documentation at the bottom:

```
LPROS,NW=DATAPREP
DSN=PP.DATAPREP.NW                                      DATE yy.ddd    PAGE 0001


------------- PROSE DATASET NAME ------------      PPNBR      PROS-TYPE

PP.DATAPREP.NW ............................      PPnnnnnn    NETWORK

       . PROSE-TYPE=NWK,NETWORK=DATAPREP
       . DESC=
       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss BY OPERATOR: USERX
       . FORM=,CARRIAGE=,TRAIN=,COPIES=
       . RPTNAME=

       THIS INPUT NETWORK PREPARES THE DATA FOR THE PAYROLL JOB AND IS
       SCHEDULED TWO WORKDAYS BEFORE PAYDAY.


SLIB-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

The LPROS command can be used at any time to display documentation.

7.3 Documenting Systems

Now add documentation to the system that all of your jobs belong. Follow these directions to display the Application System Documentation screen:

1. Return to the Workload Documentation Menu by typing **DB.4** on any screen.
2. When the menu is displayed, type **6** in the FUNCTION field to select APPLICATION SYSTEM.

When you press Enter, this screen is displayed:

```
------------------  CA-7 APPLICATION SYSTEM DOCUMENTATION  -------------------
FUNCTION:           (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


SYSTEM:



DESC:                                                 LINK:




ACTIVE SIZE: 0002

PROGRAM: SM11   MSG-INDX: 00   -- DB.4.6   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER INPUT DATA
```

Fill in this screen as follows:

FUNCTION: Type **CLEAR** and press Enter to clear out the work area. Then type **EDIT**.

SYSTEM: Identify your system as **PRIMER**.

When you press Enter, a blank input screen like this is displayed, unless you are using CA-7 under ISPF. (If you are using CA-7 under ISPF, an ISPF editor screen is displayed and you can use standard ISPF edit commands and techniques to enter your documentation.)

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
 PF                                          NOFILL I(010)









      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
EDTK-15 EWF EMPTY.
```

Type **INSERT** over PF. When you press Enter, the screen is formatted with numbered lines, like this:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70---
+----8
00010

00020

00030

00040

00050

00060

00070

00080

00090

00100

*** INSERT MODE ***
EDTB-00  COMMAND PROCESSED.
```

Type some documentation about your system on the numbered lines. When you are finished typing, press Enter.

Your screen will look something like this:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
PF                                          NOFILL I(010)
00010 THIS SYSTEM CONTAINS SAMPLE JOBS FOR THE EXERCISES IN THE PRIMER.
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
```

To save your documentation, type **SS** over PF. (Under ISPF, type **CA7SS**.) This returns you to the Application System Documentation screen:

```
------------------  CA-7 APPLICATION SYSTEM DOCUMENTATION  -------------------
FUNCTION: SAVE      (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


SYSTEM: PRIMER



DESC:                                                LINK: 0




ACTIVE SIZE: 0001


PROGRAM: SM11   MSG-INDX: 00   -- DB.4.6   --   yy.ddd / hh:mm:ss
MESSAGE: SAVE FUNCTION SUCCESSFUL FOR PPnnnnnn
```

7.4 Displaying System Documentation

To display the documentation you just entered, type the following command on the top line of your screen:

LPROS,SYS=PRIMER

This output screen is displayed with your system documentation at the bottom:

```
LPROS,SYS=PRIMER
DSN=PP.PRIMER.SYS                                      DATE yy.ddd    PAGE 0001


------------- PROSE DATASET NAME ------------      PPNBR      PROS-TYPE

PP.PRIMER.SYS ..............................      PPnnnnnn    SYSTEM

       . PROSE-TYPE=SYS,SYS=PRIMER
       . DESC=
       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss BY OPERATOR: USERX

       THIS SYSTEM CONTAINS SAMPLE JOBS FOR THE EXERCISES IN THE PRIMER.


SLIB-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

7.5 Documenting Jobs

Finally add documentation for NAMEA, including restart instructions which can be displayed separately. Follow these steps to display the CPU Job Documentation screen:

1. Return to the Workload Documentation Menu by typing **DB.4** on any screen.
2. When the menu is displayed, type **1** in the FUNCTION field to select job documentation.

When you press Enter, this screen is displayed:

```
------------------------  CA-7 CPU JOB DOCUMENTATION  ------------------------
FUNCTION:           (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


JOB:
SYSTEM:



DESC:                                                 LINK:




ACTIVE SIZE: 0001


PROGRAM: SM11   MSG-INDX: 00   -- DB.4.1   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER INPUT DATA
```

Fill in this screen as follows:

FUNCTION: Type **CLEAR** and press Enter to clear out the work area. Then type **EDIT**.

JOB: Type **NAMEA**.

When you press Enter, a blank input screen like this is displayed, unless you are using CA-7 under ISPF. (If you are using CA-7 under ISPF, an ISPF editor screen is displayed and you can use standard ISPF edit commands and techniques to enter your documentation.)

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
 PF                                              NOFILL I(010)
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
EDTK-15 EWF EMPTY.
```

Type **INSERT** over PF.

When you press Enter, the screen is formatted with numbered lines, like this:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70---
+----8
00010

00020

00030

00040

00050

00060

00070

00080

00090

00100

*** INSERT MODE ***
EDTB-00  COMMAND PROCESSED.
```

Type one line of general job documentation. Then move the cursor to line 00020 and type:

#RESTART

Then move the cursor to line 00030 and type this line:

THIS JOB IS ONLY RESTARTABLE FROM STEP 1.

Now move the cursor to line 00040 and type:

#END,RESTART

Then press Enter. Type **SS** over PF to save it and return to the CPU Job Documentation screen. (Under ISPF, type **CA7SS**.)

7.6 Displaying a Segment

Now move the cursor to the top line of your screen and use this command to display only the restart instructions for NAMEA, not the first line of general documentation:

LPROS,JOB=NAMEA,SEG=RESTART

The output screen shows only the line of restart instructions you entered on the edit screen. By introducing them with the #RESTART, you can display only that *segment* of the documentation that applies to restart. It will look like this:

```
LPROS,JOB=NAMEA,SEG=RESTART
DSN=PP.NAMEA.JOB                                        DATE yy.ddd    PAGE 0001
SEG=(RESTART)

------------- PROSE DATASET NAME ------------      PPNBR      PROS-TYPE

PP.NAMEA.JOB ..............................      PPnnnnnn    JOB

       . PROSE-TYPE=JOB,JOB=NAMEA,SYS=
       . DESC=
       . LAST MAINTENANCE ON yy.ddd AT hh:mm:ss BY OPERATOR: USERX

       THIS JOB IS ONLY RESTARTABLE FROM STEP 1.


SLIB-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

Chapter 8. Tracking Scheduled Work

This chapter describes various CA-7 commands which you can use to list current and completed work.

8.1 Listing Current Jobs

When CPU jobs are scheduled for processing, CA-7 places them in a *Request queue* where they wait until all of their requirements are satisfied. When all of their requirements are satisfied, they move into a *Ready queue.* From there they are submitted to the computer. When they start running, they move into an *Active queue.* To see a list of the jobs in these three queues, type this command on the top line of your screen:

LQ

When you press Enter, you will see a screen like this. (The number of jobs on your list will vary, depending on the number of jobs currently being processed by CA-7 at your shop. If there are no jobs in your queues, use the picture in this book to get an idea of what this display looks like.)

```
LQ
LIST=                                                  DATE=yy.ddd    PAGE 0001

  JOB  QUEUE CA-7 -DAY(DDD) AND TIME(HHMM)--   CPU     SCH ENTRY MSTR  JOB
  NAME  NAME JOB# DEADLINE SUB/START DUE-OUT SPEC/RUN  ID  MODE  REQ  STATUS

JOBX     REQ 0003 326/1025  *NONE*  326/1030  ALL-     001 SSCN  001
DLBR2    REQ 0005 326/1125  *NONE*  326/1126  *NOEX*   001 DEMD  001
JOBY     REQ 0001 326/1154  *NONE*  326/1200  ALL-     001 AUTO  008  LATE
M123     RDY 0002 326/1155  *NONE*  326/1200 SY1 -     001 SSCN  000
FYW883   ACT 0037 326/1324  *NONE*  326/1345  ALL-     001 AUTO  000
EOM      RDY 0045 326/1524 326/1500 326/1530  ALL-     001 AUTO  000

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

The second column identifies the queue each job is in at the current time:

REQ Request queue.

RDY Ready queue.

ACT Active queue.

The ENTRY MODE column tells how the job got into the queue:

SSCN It was brought in automatically when CA-7 scanned the database looking for jobs that are scheduled for processing in the next few hours.

DEMD Someone used the DEMAND command to tell CA-7 to run the job now.

AUTO It was triggered in by another job, a network, or a data set.

The last column gives the job's current status. It can tell you if the job is late, abended, or failed with a JCL error. See the *CA-7 Commands Guide* for a complete description of the JOB STATUS field.

8.1.1 Listing By Status or Queue

Instead of listing all of the jobs in the three queues, you can list only jobs with a particular status by adding the ST parameter to the LQ statement, like this:

LQ,ST=LATE

This will list only jobs that are late. Another useful variation of this command is

LQ,ST=RSTR

It lists all jobs that need to be restarted because they are back in the request queue after abending or ending with JCL errors or bad condition codes.

If you want to list the jobs in each queue separately, you can do so with these commands:

LREQ Lists the jobs in the request queue, either waiting for all of their requirements to be satisfied or waiting to be restarted. Jobs that end successfully also appear in this queue briefly while their job completion is processed.

LRDY Lists the jobs that have been submitted to the CPU but are not yet active and jobs that are ready to submit to the CPU but are waiting for resources to become available.

LACT Lists the jobs that are currently executing on a CPU.

Try issuing each of these commands at your terminal now, but you may not see any jobs listed if there are no jobs currently in the queue you specify.

8.1.2 Listing More About One Job

If you want to see queue information about a particular job, you can add the JOB parameter to the LQ statement, like this:

LQ,JOB=NAMED

Assuming the job you specify is in one of the queues at the time, the screen you see will look like this:

```
LQ,JOB=NAMED
LIST=STATUS JOB=NAMED                                    DATE=yy.ddd    PAGE 0001

  JOB  QUEUE CA-7 -DAY(DDD) AND TIME(HHMM)--   CPU     SCH ENTRY MSTR  JOB
  NAME  NAME JOB# DEADLINE SUB/START DUE-OUT SPEC/RUN  ID  MODE  REQ  STATUS

NAMED    REQ 0008 068/1538  *NONE*  068/1538  *NOEX*   001 DEMD  002

       ------------------------- REQUIREMENTS STATUS -------------------------
       _______ INTERNAL JOB=NAMEC      DATE/TIME=99068/0838
       _______ EXTERNAL USR=CALL DAVE AT X234 BEFORE RUNNING.
                                       DATE/TIME=99068/1438

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

This display shows you which queue the job is in (REQ for request) and lists the requirements that need to be satisfied so this job can move to the ready queue.

8.1.3 Listing Requirements

If you want to list the requirements that have been satisfied and the requirements that have not been satisfied, add the LIST parameter to the command like this:

LQ,JOB=NAMED,LIST=RQMT

```
LQ,JOB=NAMED,LIST=RQMT
LIST=RQMT JOB=NAMED                                    DATE=yy.ddd    PAGE 0001

  JOB  QUEUE CA-7 -DAY(DDD) AND TIME(HHMM)--   CPU     SCH ENTRY MSTR  JOB
  NAME  NAME JOB# DEADLINE SUB/START DUE-OUT SPEC/RUN  ID  MODE  REQ  STATUS

NAMED    REQ 0008 068/1538  *NONE*  068/1538  *NOEX*   001 DEMD  002

       ------------------------ REQUIREMENTS STATUS -------------------------
       _______ INTERNAL JOB=NAMEC      DATE/TIME=99068/0838
       ___X___ INTERNAL JOB=/NAMEE     DATE/TIME=99065/1618
       _______ EXTERNAL USR=CALL DAVE AT X234 BEFORE RUNNING.
                                       DATE/TIME=99068/1438

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

The requirements that have been satisfied have an X in front of them. The ones without the X are the ones that still need to be satisfied.

8.2 Listing Current Networks

When input networks are scheduled for processing, as defined on 5-8, CA-7 places them in a *Preprocessing queue* where they wait to be posted. To see a list of these networks, type this command on the top line of your screen:

LPRE

You will see a screen like this:

```
LPRE
LIST=                                                DATE=yy.ddd    PAGE 0001


  CA-7   NETWORK  NETWORK  STATION    JOB   *-----DAY(DDD) AND TIME(HHMM)-----*
  REF#    SUBID     DESC    NAME     NAME   DEADLINE   LOGIN   DUE-OUT NW/LGOUT

0010001          DATAPREP DATAENT  DMD#0010 068/1442  *NONE*  068/1742 DATAPREP
0010002          DATAPREP VERIFY   DMD#0010 068/1742  *NONE*  068/2142 DATAPREP

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

The number of networks on your list varies, depending on the number of networks scheduled by CA-7 at your shop. If there are no networks in your queues, you can use this picture to get an idea of what this display looks like. Each workstation in the network is listed separately.

Output networks are placed in a *Postprocessing queue*. This happens automatically if the output network has been defined on the Input/Output Network Tasks screen as a successor to a CPU job. When the CPU job is placed in the request queue, its output network is automatically placed in the postprocessing queue.

To see a list of networks in the postprocessing queue, type this command on the top line of your screen:

LPOST

You will see a screen like this:

```
LPOST
LIST=                                                DATE=yy.ddd    PAGE 0001


  CA-7   NETWORK  NETWORK  STATION    JOB   *-----DAY(DDD) AND TIME(HHMM)-----*
  REF#    SUBID     DESC    NAME     NAME   DEADLINE   LOGIN   DUE-OUT NW/LGOUT

0011011                  SIGNCHKS DMD#0011 068/1442  *NONE*  068/1742 CHEKPREP

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

Again, the number of networks on your list will vary, depending on the number of networks scheduled by CA-7 at your shop. If there are no networks in your queues, you can use this picture to get an idea of what this display looks like. Again, each workstation in the network is listed separately.

8.3 Listing Completed Work

Two more list commands show you jobs that already ran. When a job ends successfully, its queue record moves into the *Prior-run queue.* Use this command to list the jobs currently in your prior-run queue:

LPRRN

Depending on the number of jobs that have been run in your shop, you will see a screen that looks something like this:

```
LPRRN
LIST=                                                  DATE=yy.ddd    PAGE 0001

  JOB    CA-7 DEADLINE   START   DUE-OUT  COMPLETE    CPU    SCH ENTRY JOB
  NAME   JOB# DDD/HHMM DDD/HHMM DDD/HHMM YYDDD/HHMM SPEC/RUN ID  MODE STATUS

WHIDO951 0001 068/1104 068/1014 068/1200 99068/1014 ALL-IPO1 001 SSCN C-C0000
WHIDO952 0002 068/1103 068/1014 068/1200 99068/1014 ALL-IPO1 001 SSCN C-C0000
WHIDO511 0004 068/1104 068/1014 068/1200 99068/1014 ALL-IPO1 001 AUTO C-C0000
WHIDO521 0005 068/1103 068/1014 068/1200 99068/1014 ALL-IPO1 001 AUTO C-C0000
A        0121 047/1207 047/1115 047/1207 99047/1115 ALL-IPO1 001 DEMD C-C0000
WHIDO981 0048 067/0920 067/0415 067/0930 99067/0415 ALL-IPO1 001 SSCN C-C0000
WHIDO961 0060 067/0915 067/0615 067/0930 99067/0615 ALL-IPO1 001 SSCN C-C0000
WHIDO971 0050 067/0915 067/0415 067/0930 99067/0415 ALL-IPO1 001 SSCN C-C0000
WHIDO982 0051 067/0905 067/0415 067/0930 99067/0415 ALL-IPO1 001 AUTO C-C0000
XWHIDO   0052 067/1100 067/0415 067/1150 99067/0415 ALL-IPO1 001 AUTO C-C0000
XXWHIDO  0053 067/0850 067/0415 067/0940 99067/0415 ALL-IPO1 001 AUTO C-C0000
AWHIDO   0061 067/1100 067/0615 067/1150 99067/0615 ALL-IPO1 001 AUTO C-C0000
WHIDO96A 0062 067/0914 067/0615 067/0930 99067/0615 ALL-IPO1 001 AUTO C-C0000
WHIDO96B 0063 067/0913 067/0615 067/0930 99067/0615 ALL-IPO1 001 AUTO C-C0000
WHIDO96C 0064 067/0912 067/0615 067/0930 99067/0615 ALL-IPO1 001 AUTO C-C0000
WHIDO962 0065 067/0905 067/0615 067/0930 99067/0615 ALL-IPO1 001 AUTO C-C0000
```

This screen lists the last good run of every job submitted by CA-7.

You can use the LRLOG command to list the jobs and networks that have been processed in your shop in the last five days. You can either issue the command without a job name to see all the jobs that have been processed or you can specify a job name to track a specific job or group of jobs. Here is how you would use the command to track a group of jobs:

LRLOG,JOB=WHIDO95*,DATE=*

The output shows all the occurrences of WHIDO951 and WHIDO952 in the last five days, including restarts:

```
LRLOG,JOB=WHIDO95*,DATE=*
 DATE=*                                                DATE=yy.ddd    PAGE 0001

   EVENT       OBJECT                              ENTRY TRGR                   LATE
TYPE  TIME   TYPE NAME  CA7# SCH SYSTEM  STATUS MODE CA7#   START      END

C 99066/0815 J WHIDO951 0008 001          COMP  SSCN 0000 99066/0812 99066/0813
C 99066/0825 J WHIDO952 0013 001          COMP  SSCN 0000 99066/0822 99066/0824
C 99067/0815 J WHIDO951 0069 001          COMP  SSCN 0000 99067/0811 99067/0812
C 99067/0825 J WHIDO952 0070 001          COMP  SSCN 0000 99067/0820 99067/0822
C 99068/0813 J WHIDO951 0031 001          COMP  SSCN 0000 99068/0809 99067/0812
C 99068/0823 J WHIDO952 0032 001          COMP  SSCN 0000 99068/0818 99067/0821
C 99069/0815 J WHIDO951 0086 001          COMP  SSCN 0000 99069/0812 99069/0813
C 99069/0825 J WHIDO952 0088 001          COMP  SSCN 0000 99069/0822 99069/0824
C 99070/0813 J WHIDO951 0126 001          COMP  SSCN 0000 99070/0809 99070/0812
C 99070/0823 J WHIDO952 0128 001          COMP  SSCN 0000 99070/0818 99070/0821


SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

If you know the name of a job that has run in your shop in the last five days, try this command with your job name in the JOB field. If you do not specify a job name, the output from this command can be long. If this happens, you can stop scrolling through it at any time and go on to the next exercise.

Chapter 9. Controlling Work in Progress

This chapter shows you how to demand jobs and networks and how to use the various queue maintenance screens to control jobs and networks in the queues.

9.1 Running Jobs By Request

Most of the jobs in your shop are either scheduled or triggered, the way we scheduled and triggered jobs in Chapter 3. But sometimes a job has to be run on a different day or is only run by special request. These jobs can be *demanded in* to the system by issuing the DEMAND command. Illustrate this by demanding in two of our jobs. Type this command on the top line of your screen:

DEMANDH,JOB=NAMED

You will see a message like this on your screen:

```
DEMANDH,JOB=NAMED
 SPO7-00  JOB NAMED   (nnnn) ADDED TO THE REQ/Q BY DEMANDH

 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

Then type this command:

DEMANDH,JOB=NAMEC

You will see this message:

```
DEMANDH,JOB=NAMEC
 SPO7-00  JOB NAMEC   (nnnn) ADDED TO THE REQ/Q BY DEMANDH

 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

9.2 Showing Jobs That Are Waiting

Now we will see these jobs in the Request queue and learn how to control them. Start by displaying the Queue Maintenance Menu. To display this menu, type this command (either on the top line or in the FUNCTION field):

QM

This menu is displayed:

```
----------------------  CA-7 QUEUE MAINTENANCE MENU  ----------------------
FUNCTION ===>

MAINTENANCE TO BE PERFORMED ON:
   1 - CPU JOBS STATUS
   2 - CPU JOB PREDECESSORS
   3 - CPU JOB ATTRIBUTES
   4 - CPU JOB IN RESTART STATUS
   5 - QUEUED JCL
   6 - INPUT NETWORKS
   7 - OUTPUT NETWORKS









PROGRAM: QM00   MSG-INDX: 00   -- QM       --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

To see the status of your CPU jobs, type **1** in the FUNCTION field.

When you press Enter, this screen is displayed:

```
-------------  CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS PROMPT  -------------
FUNCTION ===>           (LEAVE BLANK EXCEPT TO TRANSFER)

DESIRED JOB(S) =>             SPECIFIC, GENERIC OR CA-7# (DEFAULT ALL)
LIST SEQUENCE  =>             J=JOBNAME, N=JOB#, E=QUEUE ENTRY (DEFAULT)
CA-7 QUEUE ID  => REQ         RDY OR ACT (DEFAULT IS REQ)

DISPLAY RQMTS  => NO          (DISPLAY REQUIREMENT INFORMATION)
RQMT CRITERIA  =>             (ALL,ANY,JOB,INT,EXT,USR,NWK,SUB,HLD,JCLO,
                               VER,SKEL,REST,BINT)

FILL FUNCTION  =>             (OPTIONAL)
   C = CANCEL                       R = RELEASE FROM HOLD STATUS
   F = GO TO RESTART SCREEN         S = SATISFY SUBMIT TIME RQMT
   H = PLACE IN HOLD                U = GO TO ATTRIBUTE UPDATE SCREEN
   J = REVERSE JCL OVERRIDE RQMT    V = REVERSE VERIFY RQMT STATUS
   P = RESPOND TO PROMPTING         X = GO TO JOB PREDECESSOR SCREEN
   Q = REQUEUE FOR A RESTART        E = FETCH QUEUED JCL AND EDIT


PROGRAM: QM2F   MSG-INDX: 00   -- QM.1     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER VALUES, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

It asks you which jobs you want to see, in what order you want them listed, and which queues you want to see. To see all jobs in the Request queue in the order they reside in the queue, just press Enter.

This screen is displayed:

```
-----------------  CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS  -----------------
F-JOBNAME--CA7#
  NAMED    nnnn                                                  JOB: *
  NAMEC    nnnn                                                  SEQ: ENTRY
                                                                 QUEUE: REQ
                                                                 LIST: ALL

                                                                 FUNCTIONS:
                                                                   C=CANCEL
                                                                   F=RESTART
                                                                   H=HOLD
                                                                   J=JCLOVRD
                                                                   P=RSVP
                                                                   Q=REQUEUE
                                                                   R=RELEASE
                                                                   S=SUBTM OFF
                                                                   U=UPDATE
                                                                   V=VERIFY
                                                                   X=RQMT POST
                                                                   E=EDIT QJCL
PROGRAM: QM20   MSG-INDX: 00   -- QM.1-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION IN 'F' FIELD  OR  ENTER A COMMAND ON THE TOP LINE
```

The jobs you see listed on your screen will depend on the number of jobs that are actually in your Request queue at the current time. You should also see NAMEC and NAMED which you just added to the Request queue by the DEMANDH command. (If not, scroll forward until you do.)

This screen not only lists the jobs in the queue, it also lets you change their status, their JCL, or the way they are processed. The right side of the screen lists the function codes you can use to make these changes.

The best way to see why a job is sitting in the Request queue is to use the LQ command to list its requirements, the same way we did on 8-5. Try this now with NAMED by typing this command on the top line of your screen:

LQ,JOB=NAMED

When you press Enter, this screen is displayed:

```
LQ,JOB=NAMED
LIST=STATUS JOB=NAMED                                    DATE=yy.ddd    PAGE 0001

  JOB  QUEUE CA-7 -DAY(DDD) AND TIME(HHMM)--   CPU     SCH ENTRY MSTR  JOB
  NAME  NAME JOB# DEADLINE SUB/START DUE-OUT SPEC/RUN  ID  MODE  REQ  STATUS

NAMED    REQ nnnn 068/1828  *NONE*  068/1828  *NOEX*   001 DEMD  003

       ------------------------- REQUIREMENTS STATUS -------------------------
       _______ JOB ON HOLD
       _______ INTERNAL JOB=NAMEC      DATE/TIME=99068/1727
       _______ EXTERNAL USR=CALL DAVE AT X234 BEFORE RUNNING.
                                       DATE/TIME=99068/1728

SLIF-00 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd
```

As you can see NAMED has the same requirements it did in the sample screen on 8-5, plus the additional requirement that it is on hold (since we added it to the Request queue with the DEMANDH command).

Another way to see what requirements are holding a job in the Request queue is to use the XQM command. If you go to the top of the screen and type XQM the CPU Jobs Status (RQMTS) screen is displayed:

```
-------------- CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS (RQMTS) --------------
F-JOBNAME---J--I--E--U--N-SHJV
  NAMEC     .  .  .  .  .  H                                    JOB: *
  NAMED     1  .  .  1  .  H                                    SEQ: JOBNAME
                                                                QUEUE: REQ
                                                                LIST: ALL

                                                                FUNCTIONS:
                                                                  C=CANCEL
                                                                  F=RESTART
                                                                  H=HOLD
                                                                  J=JCLOVRD
                                                                  P=RSVP
                                                                  Q=REQUEUE
                                                                  R=RELEASE
                                                                  S=SUBTM OFF
                                                                  U=UPDATE
                                                                  V=VERIFY
                                                                  X=RQMT POST
                                                                  E=EDIT QJCL
 PROGRAM: QM20   MSG-INDX: 00   -- QM.1-M   --   yy.ddd / hh:mm:ss
 MESSAGE: ENTER FUNCTION IN 'F' FIELD  OR  ENTER A COMMAND ON THE TOP LINE
```

The CPU Jobs Status (RQMTS) screen shows you a summary of the outstanding requirements for each job listed. It shows counts for the number of job requirements (J), internal data set requirements (I), external data set requirements (E), user requirements (U), and network requirements (N). It also has flags (SHJV) for submit time requirement (S), hold requirement (H), JCL override requirement (J), and verify requirement (V).

For NAMED to move from the request queue to the ready queue, all of its requirements must be posted. We will illustrate how to do this by returning to the CPU Jobs Status screen. (You can also post them the same way from the XQM screen.)

9.3 Posting Requirements

To return directly to the CPU Jobs Status screen, type **XQ** on the top line of your screen. When you press Enter, this screen is redisplayed:

```
-----------------  CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS  -----------------
F-JOBNAME--CA7#
  NAMED    nnnn                                                    JOB: *
  NAMEC    nnnn                                                    SEQ: ENTRY
                                                                   QUEUE: REQ
                                                                   LIST: ALL

                                                                   FUNCTIONS:
                                                                     C=CANCEL
                                                                     F=RESTART
                                                                     H=HOLD
                                                                     J=JCLOVRD
                                                                     P=RSVP
                                                                     Q=REQUEUE
                                                                     R=RELEASE
                                                                     S=SUBTM OFF
                                                                     U=UPDATE
                                                                     V=VERIFY
                                                                     X=RQMT POST
                                                                     E=EDIT QJCL
PROGRAM: QM20   MSG-INDX: 00   -- QM.1-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION IN 'F' FIELD  OR  ENTER A COMMAND ON THE TOP LINE
```

Since NAMEC is one of NAMED's requirements, it must run before NAMED can run. For NAMEC to run, we must satisfy its requirements. To do this, tab down to the F field next to NAMEC and type **X.**

When you press Enter, the CPU Job Predecessors screen is displayed:

```
--------------  CA-7 QUEUE MAINTENANCE - CPU JOB PREDECESSORS  ---------------
JOB: NAMEC     CA-7#: nnnn   MCNT: 001
F-TYP-NUMBER-E-DESCRIPTION
  HLD          JOB HELD IN REQUEST QUEUE









PROGRAM: QM30   MSG-INDX: 00   -- QM.2-X   --   yy.ddd / hh:mm:ss
MESSAGE: SET 'F' = 'X' TO POST OR ENTER A COMMAND ON TOP LINE
```

It lists the only requirement that is keeping NAMEC in the Request queue: it is on hold. To satisfy this requirement, just tab down to the requirement and type **X** next to it. When you press Enter, you are returned to the CPU Jobs Status screen:

```
-----------------  CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS  -----------------
F-JOBNAME--CA7#
  NAMED    nnnn                                                  JOB: *
* NAMEC    nnnn                                                  SEQ: ENTRY
                                                                  QUEUE: REQ
                                                                  LIST: ALL

                                                                  FUNCTIONS:
                                                                    C=CANCEL
                                                                    F=RESTART
                                                                    H=HOLD
                                                                    J=JCLOVRD
                                                                    P=RSVP
                                                                    Q=REQUEUE
                                                                    R=RELEASE
                                                                    S=SUBTM OFF
                                                                    U=UPDATE
                                                                    V=VERIFY
                                                                    X=RQMT POST
                                                                    E=EDIT QJCL
PROGRAM: QM20   MSG-INDX: 00   -- QM.1-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION IN 'F' FIELD  OR  ENTER A COMMAND ON THE TOP LINE
```

The asterisk next to NAMEC indicates that its requirement was posted. You can now post NAMED's remaining requirements by typing **X** next to it.

When you press Enter, the CPU Job Predecessors screen is displayed with NAMED's outstanding requirements:

```
--------------  CA-7 QUEUE MAINTENANCE - CPU JOB PREDECESSORS  ---------------
JOB: NAMED     CA-7#: nnnn   MCNT: 003
F-TYP-NUMBER-E-DESCRIPTION
  HLD          JOB HELD IN REQUEST QUEUE
  JOB          NAMEC
  USR          CALL DAVE AT X234 BEFORE RUNNING.









PROGRAM: QM30   MSG-INDX: 00   -- QM.2-X   --   yy.ddd / hh:mm:ss
MESSAGE: SET 'F' = 'X' TO POST OR ENTER A COMMAND ON TOP LINE
```

Assume that we call Dave to make sure it is all right to release NAMED. Now we can post this requirement as having been satisfied. To do this, type **X** in front of it. Also assume that you are ready to remove the hold on NAMED. To do that, type **X** next to that requirement. When you press Enter, you are returned to the CPU Jobs Status screen:

```
-----------------  CA-7 QUEUE MAINTENANCE - CPU JOBS STATUS  -----------------
F-JOBNAME--CA7#
* NAMED    nnnn                                                  JOB: *
  NAMEC    nnnn                                                  SEQ: ENTRY
                                                                 QUEUE: REQ
                                                                 LIST: ALL

                                                                 FUNCTIONS:
                                                                   C=CANCEL
                                                                   F=RESTART
                                                                   H=HOLD
                                                                   J=JCLOVRD
                                                                   P=RSVP
                                                                   Q=REQUEUE
                                                                   R=RELEASE
                                                                   S=SUBTM OFF
                                                                   U=UPDATE
                                                                   V=VERIFY
                                                                   X=RQMT POST
                                                                   E=EDIT QJCL
PROGRAM: QM20   MSG-INDX: 00   -- QM.1-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION IN 'F' FIELD  OR  ENTER A COMMAND ON THE TOP LINE
```

The asterisk next to NAMED indicates that its requirements were posted.

9.4 Restarting a Failed Job

If a job needs to be restarted, it will also be listed on the CPU Jobs Status screen. To restart it, you would type F next to the job name. (We do not have any jobs to restart, so do not do this online.) This would display this screen (or a shorter version if your shop does not use CA-11):

```
------------  CA-7 QUEUE MAINTENANCE - CPU JOB IN RESTART STATUS  -----------
JOB: NAMEC      CODE: JCLERR  LAST-STEP:            MCNT: 001
CA-7#: nnnn     JES#: nnnn    NODE-NAME: LOCAL

  REASON:

  --   -- RESUBMIT FOR PRODUCTION

  --   -- FORCE COMPLETE

  --   -- CA-11 RESTART/RERUN       PSEUDO:
          START:                    END:
          CC:        BYPGDG:        USAGE:     LRTCD:                    = 0
          CMT STATUS:

  --   -- SET PARM DATA FOR RMS AND RESUBMIT
          PARM:

  --   -- DO NOT INSERT RMS PROC BUT RESUBMIT

PROGRAM: QM50   MSG-INDX: 01   -- QM.4-X   --   yy.ddd / hh:mm:ss
MESSAGE: 'X' THE DESIRED FUNCTION OR ENTER A COMMAND ON THE TOP LINE
```

The name of the job you want to restart would be filled in for you at the top of the screen. All you would have to do is give the reason for the restart and select one of the options listed on the screen.

9.5 Changing JCL for a Waiting Job

On 1-11 we saw a screen you can use to change a job's JCL. You can only use that screen to change JCL if the job is not yet in the Request queue. If the job is already in the request queue and you need to change the JCL, you can do so by typing E next to the job name on the CPU Jobs Status screen. (Our sample jobs do not have JCL, so do not do this online.)

The JCL would be displayed, either on a screen like this or on an ISPF editor screen if you are using CA-7 under ISPF:

```
      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
PF                                                NOFILL XSEQ (NONUM) I(010)
00010 //JOBA   JOB ...
00020 //*      TESTING
00030 /*JOBPARM R=5070,T=1
00040 /*ROUTE PRINT USDALSP8
00050 //STEP1  EXEC  PGM=IEFBR14
00060 /*









      ----+----10---+----20---+----30---+----40---+----50---+----60---+----70*
```

You would change the JCL right on this screen and then type **SR** to save your changes (or **CA7SR** under ISPF).

9.6 Posting Networks

You can also change the status of networks when they are in the queues waiting to be processed. To illustrate this, add a network to your preprocessing queue now by typing this command on the top line of your screen:

DMDNW,NW=DATAPREP

You will see a message like this on your screen:

```
DMDNW,NW=DATAPREP
 SPOE-00  JOB DMD#0001(nnnn) ADDED TO THE PRE/Q
           FOR NETWORK=DATAPREP

 REQUEST COMPLETED AT hh:mm:ss ON yy.ddd.
```

To see the network in the queue, start by typing **QM** on the top line of your screen to return to the Queue Maintenance Menu.

```
 ----------------------  CA-7 QUEUE MAINTENANCE MENU  ----------------------
 FUNCTION ===>

 MAINTENANCE TO BE PERFORMED ON:
    1 - CPU JOBS STATUS
    2 - CPU JOB PREDECESSORS
    3 - CPU JOB ATTRIBUTES
    4 - CPU JOB IN RESTART STATUS
    5 - QUEUED JCL
    6 - INPUT NETWORKS
    7 - OUTPUT NETWORKS









 PROGRAM: QM00   MSG-INDX: 00   -- QM       --   yy.ddd / hh:mm:ss
 MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

When the menu is displayed, type **6** in the function field to select INPUT NETWORKS.

When you press Enter, this prompting screen is displayed:

```
--------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS PROMPT  -------------
FUNCTION ===>           (LEAVE BLANK EXCEPT TO TRANSFER)

NETWORK(S) =>             SPECIFIC OR GENERIC  (DEFAULT ALL)

SUBID(S) ===>             SPECIFIC OR GENERIC  (DEFAULT ALL)

JOB(S) =====> *           SPECIFIC, GENERIC OR CA-7#  (DEFAULT ALL)

STATION(S) =>             SPECIFIC, GENERIC OR *  (DEFAULT IS ALL THE
                                    STATIONS ASSIGNED TO THIS TERMINAL)

2-UP ? =====> N           Y = 2-UP  (DEFAULT IS 1-UP)

FILL WITH ==>             C = CANCEL          O = LOGOUT
 (OPTIONAL)               H = HOLD            P = RESPOND TO PROMPTING
                          I = LOGIN           R = RELEASE FROM HOLD



PROGRAM: QM10   MSG-INDX: 00   -- QM.6     --   yy.ddd / hh:mm:ss
MESSAGE: ENTER VALUES, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
```

It asks you questions, like which networks you want to see. To see all networks scheduled at all stations, type ***** in the STATION(S) field and press Enter. This screen is displayed:

```
-----------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS  ----------------*
                                              POS:     FL:         INITS:
F --REF-- JOBNAME- NETWORK- STATION- SUBID--- DESC---- REMARKS--------------*
  0013001 DMD#0001 DATAPREP DATAENT           DATAPREP FIRST STATION
```

```
PROGRAM: QM10   MSG-INDX: 00   -- QM.6-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION (C,F,H,I,O,P, OR R) IN 'F' FIELD    OR
         ENTER A COMMAND ON THE TOP LINE
```

It lists the first workstation in the network and provides a function field for you to log in and out of this station. Assume that you are ready to process the work at the DATAENT station now and type **I** in the F field to log in to this station.

When you press Enter, the screen looks like this:

```
-----------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS  ----------------*
                                          POS:     FL:         INITS:
F --REF-- JOBNAME- NETWORK- STATION- SUBID--- DESC---- REMARKS--------------*
  0013001 DMD#0001 DATAPREP DATAENT           DATAPREP IN PROCESS









PROGRAM: QM10   MSG-INDX: 00   -- QM.6-X   --   yy.ddd / hh:mm:ss
MESSAGE: 01 TRANSACTIONS PROCESSED
```

Now assume you have completed the work at the first station. Log off of it by typing **O** in the F field and pressing Enter. The screen now looks like this:

```
-----------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS  ----------------*
                                          POS:     FL:         INITS:
F --REF-- JOBNAME- NETWORK- STATION- SUBID--- DESC---- REMARKS--------------*
  0013001 DMD#0001 DATAPREP DATAENT           DATAPREP SEND TO VERIFY
  0013002 DMD#0001 DATAPREP VERIFY            DATAPREP FROM DATAENT









PROGRAM: QM10   MSG-INDX: 00   -- QM.6-X   --   yy.ddd / hh:mm:ss
MESSAGE: ENTER FUNCTION (C,F,H,I,O,P, OR R) IN 'F' FIELD    OR
         ENTER A COMMAND ON THE TOP LINE
```

Now log in to the second workstation by typing **I** in the F field on the line with the VERIFY station.

The screen now looks like this:

```
-----------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS  ----------------*
                                          POS:     FL:         INITS:
F --REF-- JOBNAME- NETWORK- STATION- SUBID--- DESC---- REMARKS--------------*
  0013001 DMD#0001 DATAPREP DATAENT           DATAPREP SEND TO VERIFY
  0013002 DMD#0001 DATAPREP VERIFY            DATAPREP IN PROCESS









PROGRAM: QM10   MSG-INDX: 00   -- QM.6-X   --   yy.ddd / hh:mm:ss
MESSAGE: 01 TRANSACTIONS PROCESSED
```

Now log off the second workstation by typing **O** in the F field on the second line. The screen now looks like this:

```
-----------------  CA-7 QUEUE MAINTENANCE - INPUT NETWORKS  ----------------*
                                          POS:     FL:         INITS:
F --REF-- JOBNAME- NETWORK- STATION- SUBID--- DESC---- REMARKS--------------*
  0013001 DMD#0001 DATAPREP DATAENT           DATAPREP SEND TO VERIFY
  0013002 DMD#0001 DATAPREP VERIFY            DATAPREP NETWORK COMPLETE









PROGRAM: QM10   MSG-INDX: 00   -- QM.6-X   --   yy.ddd / hh:mm:ss
MESSAGE: 01 TRANSACTIONS PROCESSED
```

The network has now been completely posted.

Chapter 10. Deleting What You Defined

This chapter deletes the records you added to the database.

10.1 Deleting Jobs

When you have finished all of the exercises in this book, please delete everything you added to the database. Start by typing **XQ** command on the top line of your screen to see if any of your jobs are in the request queue. If they are, tab down to them and type **C** next to them to cancel them.

Then start deleting the jobs you have defined by following these steps:

1. Display the CPU Job Definition screen by typing **DB.1** on any screen.
2. When the CPU Job Definition screen is displayed, type **LIST** in the FUNCTION field and **NAMEA** in the JOB field to display NAMEA's values.

When you press Enter, this screen is displayed:

```
------------------------  CA-7 CPU JOB DEFINITION  -------------------------
FUNCTION: LIST      (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB: NAMEA
GENERAL:      SYSTEM: PRIMER    JOBNET:           OWNER:           UID: 0

JCL:          ID: 0    MEMBER: NAMEA     RELOAD: N  EXEC: N  RETAIN-JCL: N
              LIB:
REQUIREMENTS: HOLD: N  JCL-OVRD: N  USE-OVRD-LIB: N  VERIFY: N  MAINT: N
              SATISFACTION LEAD-TIME:  JOB: 0   DSN: 0   ARFSET:

EXECUTION:    MAINID: ALL   INSERT-RMS: N  COND-CODE: 0     RO: 0
              DONT SCHEDULE -- BEFORE: 00000 0000  AFTER: 99999 0000

MESSAGES:     LTERM:           REQUIREMENT-LIST: Y  PROMPTS: N
              ERROR MSGS -- RQMTS NOT USED: Y  DSN NOT FOUND: Y

RESOURCES:    REGION: 0     CLOCK-TIME: 0000  CPU-TIME: 00000
              CLASS:    PRTY: 000   MSGCLASS:
              TAPE DRIVES...TYPE1: 000 M 000 C   TYPE2: 000 M 000 C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: LIST SUCCESSFUL
```

To delete this record, just type **DD** in the FUNCTION field and press Enter.

The screen now looks like this:

```
------------------------  CA-7 CPU JOB DEFINITION  -------------------------
FUNCTION: DD        (ADD,DELETE,DD,PURGE,DELPRRN,FORMAT,LIST,UPD)
JOB: NAMEA
GENERAL:      SYSTEM: PRIMER    JOBNET:           OWNER:           UID: 0

JCL:          ID: 0    MEMBER: NAMEA     RELOAD: N  EXEC: N  RETAIN-JCL: N
              LIB:
REQUIREMENTS: HOLD: N  JCL-OVRD: N  USE-OVRD-LIB: N  VERIFY: N  MAINT: N
              SATISFACTION LEAD-TIME:  JOB: 0   DSN: 0   ARFSET:

EXECUTION:    MAINID: ALL   INSERT-RMS: N  COND-CODE: 0     RO: 0
              DONT SCHEDULE -- BEFORE: 00000 0000  AFTER: 99999 0000

MESSAGES:     LTERM:           REQUIREMENT-LIST: Y  PROMPTS: N
              ERROR MSGS -- RQMTS NOT USED: Y  DSN NOT FOUND: Y

RESOURCES:    REGION: 0     CLOCK-TIME: 0000  CPU-TIME: 00000
              CLASS:    PRTY: 000   MSGCLASS:
              TAPE DRIVES...TYPE1: 000 M 000 C   TYPE2: 000 M 000 C

PROGRAM: SM20   MSG-INDX: 00   -- DB.1     --   yy.ddd / hh:mm:ss
MESSAGE: DELETE SUCCESSFUL. 000 DATA SET(S) DELETED
```

Deleting the job also deletes all of the following information you added to this job's record:

- any scheduling information defined on the CPU Job Scheduling screens **for all schedule IDs**
- any triggers defined on the Job Triggering screen (but not the jobs triggered; they must be deleted separately)
- any requirements defined on the predecessor/successor screens, including network requirements defined on the Input/Output Network Tasks screen (but not the networks themselves)
- any documentation defined on the CPU Job Documentation screen

Now follow the same steps to delete NAMEB, NAMEC, NAMED, and NAMEE. Listing the job first is not required. You can delete the job by typing **DD** in the FUNCTION field and the name of the job in the JOB field. We suggest listing the job first to make sure you are deleting the right job!

10.2 Deleting Networks

The next thing we have to delete is the two networks we defined. To delete them, follow these steps:

1. Display the Input/Output Network Definition screen by typing **DB.5.**
2. When the Input/Output Network Definition screen is displayed, type **LIST** in the FUNCTION field and the name of your **input** network in the NETWORK field: **DATAPREP.**

When you press Enter, this screen is displayed:

```
------------------  CA-7 INPUT/OUTPUT NETWORK DEFINITION  --------------------
FUNCTION: LIST      (ADD,DELETE,FORMAT,LIST,UPD)

NETWORK: DATAPREP   TYPE: INPUT
SUB-ID:             JOB:            SCHD PROSE:

STATION 1: DATAENT
STATION 2: VERIFY
STATION 3:
STATION 4:
STATION 5:
STATION 6:
STATION 7:
STATION 8:
STATION 9:




PROGRAM: SM40   MSG-INDX: 00   -- DB.5     --   yy.ddd / hh:mm:ss
MESSAGE: LIST FUNCTION SUCCESSFUL FOR NWnnnnnn
```

When you are sure this is the right record, type **DELETE** in the FUNCTION field and press Enter.

This screen is displayed:

```
------------------  CA-7 INPUT/OUTPUT NETWORK DEFINITION  --------------------
FUNCTION: DELETE    (ADD,DELETE,FORMAT,LIST,UPD)

NETWORK: DATAPREP   TYPE: INPUT
SUB-ID:             JOB:            SCHD PROSE:

STATION 1: DATAENT
STATION 2: VERIFY
STATION 3:
STATION 4:
STATION 5:
STATION 6:
STATION 7:
STATION 8:
STATION 9:




PROGRAM: SM40   MSG-INDX: 00   -- DB.5     --   yy.ddd / hh:mm:ss
MESSAGE: DELETE FUNCTION SUCCESSFUL FOR NWnnnnnn
```

Now delete the **output** network by retyping the **D** in the FUNCTION field and changing NETWORK to **CHEKPREP**. Deleting the networks also deletes all of their scheduling information and documentation.

10.3 Deleting Documentation

The only documentation that has not been deleted automatically is the documentation you defined for your system. To delete it, follow these steps:

1. Display the Application System Documentation screen by typing **DB.4.6.**
2. When the Application System Documentation screen is displayed, type **DELETE** in the FUNCTION field and **PRIMER** in the SYSTEM field.

When you press Enter, this screen is displayed:

```
------------------  CA-7 APPLICATION SYSTEM DOCUMENTATION  --------------------
FUNCTION: DELETE    (APPEND,CLEAR,DELETE,EDIT,FE,FETCH,LIST,REPL,SAVE,UPD)


SYSTEM: PRIMER



DESC:                                                 LINK: 0




ACTIVE SIZE: 0014

PROGRAM: SM11   MSG-INDX: 00   -- DB.4.6   --   yy.ddd / hh:mm:ss
MESSAGE: DELETE FUNCTION SUCCESSFUL FOR PPnnnnnn
```

When you have finished deleting all of your records, you may return to any chapter in this book for review, keep the book for reference, or return it to your CA-7 administrator.

Appendix A. Concepts

Job

A job is a task or unit of work directed to a CPU. Although CA-7 can bypass CPU execution, a job usually includes a set of JCL control statements with one JOB statement and one or more steps that are executed on the computer. Jobs are defined to CA-7 on the CPU Job Definition screen, either online or in batch mode. Each job's individual scheduling criteria can also be defined to CA-7 so that the job can be automatically selected for processing on the right day, at the right time, in the right order.

Jobs that are defined to CA-7 but do not have defined scheduling criteria can be run on request by issuing online commands. Jobs that have not been defined to CA-7 can also be run on request; they are added to the database with default values the first time they are run by request. The LOAD command can be used to add jobs to the database without running them.

JCL

When a job is ready to be processed under CA-7 control, CA-7 automatically finds its JCL and submits a copy of it to the computer for execution. Therefore, the JCL for each job under CA-7 control must be stored in a CA-Librarian, CA-Panvalet, or partitioned data set which can be dynamically accessed by CA-7.

Each library you use to store JCL must have a unique ID number and must be defined to CA-7 on a JCL statement in the initialization file. Each library can have an alternate library which can be used to store temporary JCL; this alternate library is automatically searched before the permanent JCL library. Onetime overrides can be stored in a special override library. Other overrides can be made by adding special statements to the JCL or by using the CA-7 text editor to change the JCL before it is submitted for execution.

Calendar

Base calendars define the processing days (workdays) and nonprocessing days (weekends and holidays) in your data center. They can also be used to define the beginning and end of each month if you do not use the standard Gregorian months. They also tell CA-7 how to count relative days: whether to count every day or just processing days.

At least one calendar is required for every year. It is defined by coding keyword values in a CA-7 macro which must then be assembled and link edited into the CA-7 calendar library or load library. Each calendar must also be defined to CA-7 on a CALBLK statement in the initialization file. Once a calendar is defined, it can be referenced by any number of jobs.

Scheduling Each job can have its own unique scheduling criteria. This scheduling criteria is defined to CA-7 on the scheduling screens and stored in the database with the job's definition. The scheduling criteria can be based on either dates and times or events. Date-and-time scheduling tells CA-7 when to run a job, for example, the last workday of every month. CA-7 then uses the calendar referenced on the scheduling screen to determine the exact processing days. Triggering tells CA-7 to process a job after an event, regardless of when that event takes place. The event can be the completion of another job, the completion of an input network, or the creation of a data set.

The first job in a job stream is usually scheduled by date and time, and the rest of the jobs are then triggered. This ensures that jobs run in the proper order, while reducing calendar maintenance, schedule-scan activity, requirement posting, and the amount of jobs in the queues at one time.

Requirement Requirements are things that must happen before a job can run. They are called predecessors because they must precede the job. They can be the completion of another job, the completion of an input network, the completion of a manual task, or the creation of a data set. They can be defined for each job, in addition to its scheduling criteria.

When the job is brought into the queues for processing, its requirements are attached to it, and it cannot be released for processing until all of its requirements are satisfied (either automatically or manually). The requirements screens can also be used to define mutually exclusive jobs or output networks that are successors to CPU jobs.

Schedule ID Schedule IDs are numbers from 1 to 255 that are used to identify scheduling variations. Scheduling variations allow you to schedule the same job in different ways: at different dates and times, with different triggers, with different requirements, with different due-out times, and with different JCL overrides.

Schedule Scan The schedule scan program scans the database as often as you specify, selects jobs that are scheduled for processing in the next few hours, and brings them into the request queue.

Queue

Five disk data sets hold records of CPU jobs during different phases of processing. A job starts in the request queue. It is put there because of one of the following: the schedule scan program reads the database and finds out the job is scheduled for processing; it is triggered by an event; or it is requested by the LOAD, DEMAND, or RUN command. At the same time, the job's JCL is found in the appropriate JCL library and a copy is written to the trailer queue.

When all of the job's requirements are satisfied, the job record is moved from the request queue to the ready queue. When resources are available, the JCL is submitted to JES. When the job goes active on the system, the job record is moved to the active queue. At job termination, CA-7 returns the job record to the request queue. If the termination was not successful, the record is held for operator intervention, and the JCL remains in the trailer queue so the job can be restarted. If the termination was successful, the job record is moved to the prior-run queue and the JCL is deleted from the trailer queue.

Two additional disk data sets hold records of non-computer tasks: the preprocessing queue lists all input networks that are scheduled for processing; the postprocessing queue lists all output networks that are waiting for their CPU jobs to end so they can be processed.

Documentation

Free-form, card-image documentation about any part of the workload can be stored in the CA-7 database and then either displayed online or printed (through the batch-terminal interface). Relevant documentation can also be routed to a terminal and displayed there when a job is scheduled. Documentation can be defined for a CPU job, an application system, a data set, a network, a DD statement, or any other user-defined item. It can be manually entered into the database using the documentation screens or transferred to the CA-7 database from other online sources. Documentation members can be divided into segments for easier retrieval.

Network

A network is a group of non-computer tasks that must be performed either before a job runs on the computer (input network) or after a job runs on the computer (output network). Each network consists of from one to nine workstations, listed in the order in which their tasks are performed. Input networks can be scheduled just like CPU jobs and can trigger CPU jobs. Input networks can also be defined as predecessors of CPU jobs so that the CPU job cannot run until its input network is complete. Output networks can be defined as successors of CPU jobs so that the output network is placed in the postprocessing queue when its CPU job is placed in the request queue.

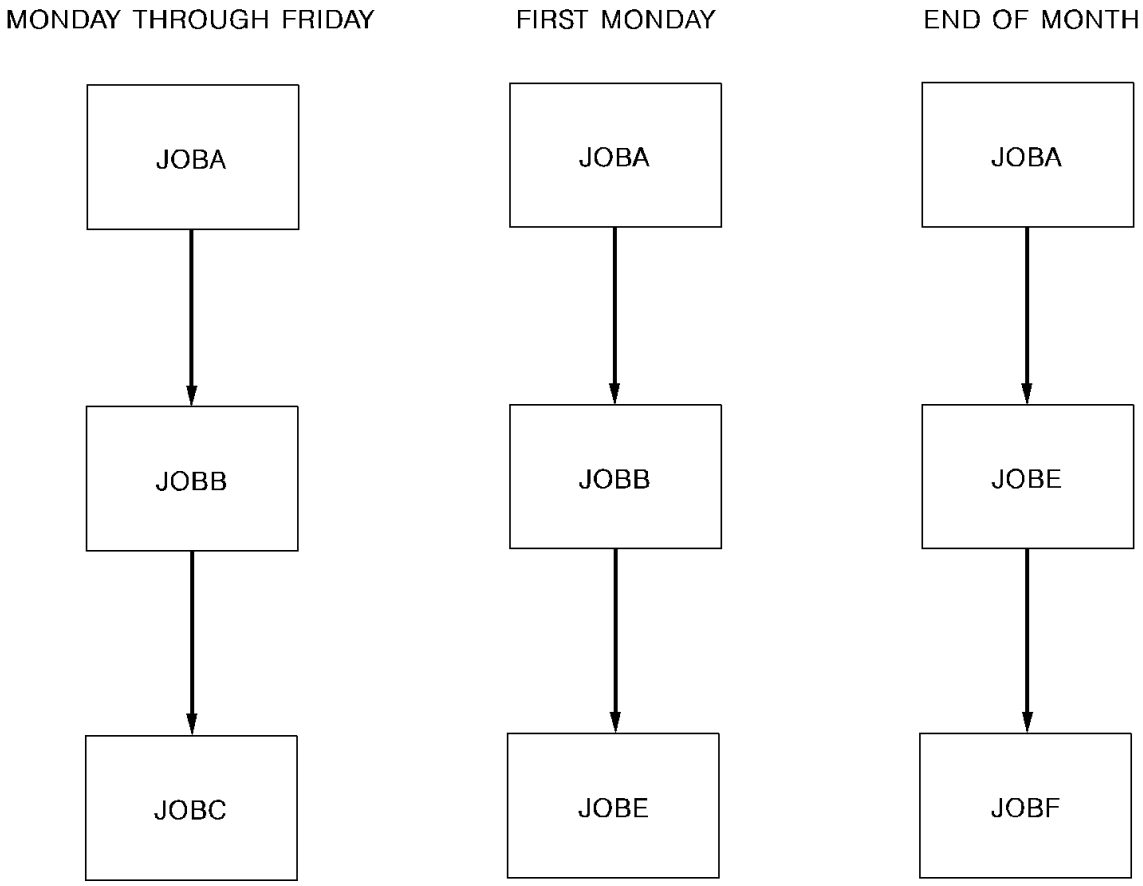
Workstation A workstation is the place where a non-computer task is performed. Workstations where pre-CPU tasks are performed are grouped together as input networks. Workstations where post-CPU tasks are performed are grouped together as output networks. CA-7 monitors each workstation and sends messages prompting the workstation terminal operator if its task is not started or completed on time. When a task at one workstation is finished, it must be manually posted as complete before the task at the next workstation can be started.

Appendix B. Schedule ID Examples

This appendix explains schedule IDs and contains sample scheduling flowcharts in two different formats.

B.1 Understanding Schedule IDs

Schedule IDs are 1- to 3-digit numbers that are used to identify scheduling variations. These variations allow you to schedule the same job in different ways. Here is an example:



JOBA always uses the same JCL and has the same requirements, but it triggers different jobs depending on what day it is. To define each of these scheduling variations to CA-7, JOBA must be given three different schedule IDs:

- It is scheduled with schedule ID 1 Monday through Friday when it triggers JOBB which then triggers JOBC.
- It is scheduled with schedule ID 2 on the first Monday of the month when JOBB triggers JOBE.
- It is scheduled with schedule ID 3 at the end of the month when it triggers JOBE.

Schedule IDs can also be used to allow other scheduling variations:

- data set or network triggers instead of job triggers on certain days
- different requirements on different days
- different due-out or processing times on different days
- special JCL on certain days (the inclusion or exclusion of JCL statements is predefined in the JCL library using #J or #X control statements)

The same job can even be triggered under one schedule ID and calendar-scheduled under another schedule ID.

The schedule ID is defined in the SCHID field on the Job Schedule Parameter Edit screen when you schedule the job. It is then entered on the screens where you define triggers and requirements. It could also be included when you issue the DEMAND and RUN commands. If it is not, it defaults to the first schedule ID defined in the database. If no schedule has been defined for the job in the database, it defaults to 1.

B.2 Flowcharts

This topic contains examples of the kind of flowcharts you will use to organize your jobs into groups. They illustrate an accounts payable system with three different scheduling variations:

SCHID=1 The first flowchart shows the daily processing flow. It runs Monday through Friday, except the first and last days of the month.

SCHID=2 The second flowchart shows the first day of the month. It processes the normal daily jobs, as well as several monthly jobs.

SCHID=3 The third flowchart shows the last day of the month. It processes some of the normal daily jobs and some different monthly jobs.

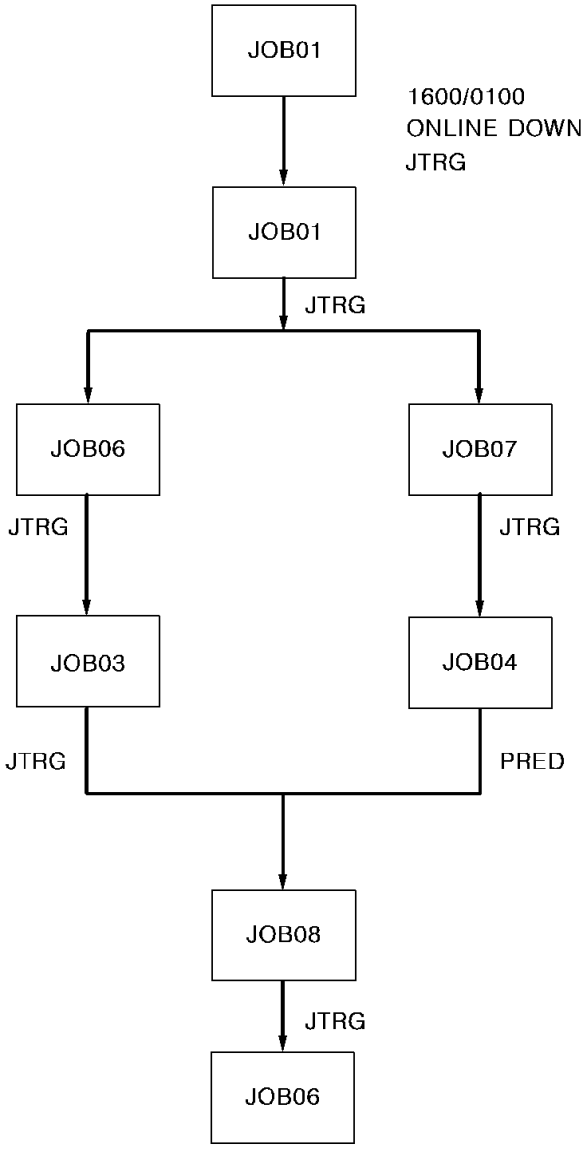
The only job in this sample system that will be calendar-scheduled is JOB01:

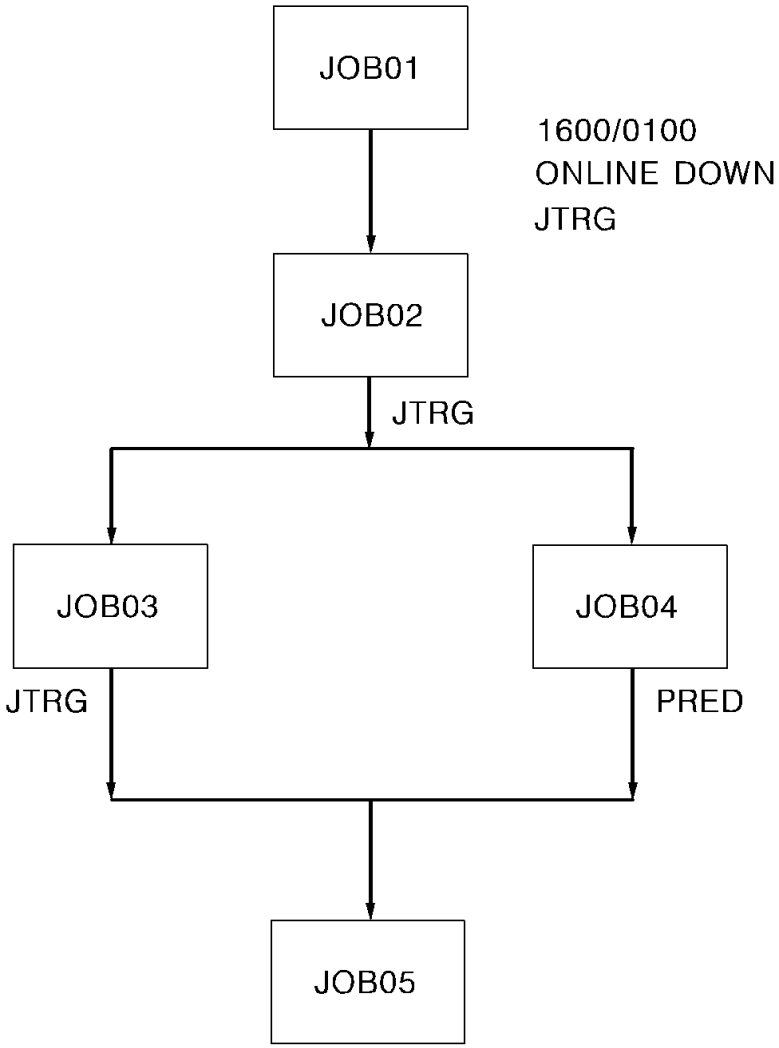
- It must be scheduled with a due-out time (DOTM) of 1600 under schedule IDs 1 and 2 and a due-out time of 1800 under schedule ID 3.
- Its lead time (LDTM) should be defined as one hour.
- It also has an additional requirement that the online systems are down; this must be defined to CA-7 on the User Memo-Form Predecessors screen.

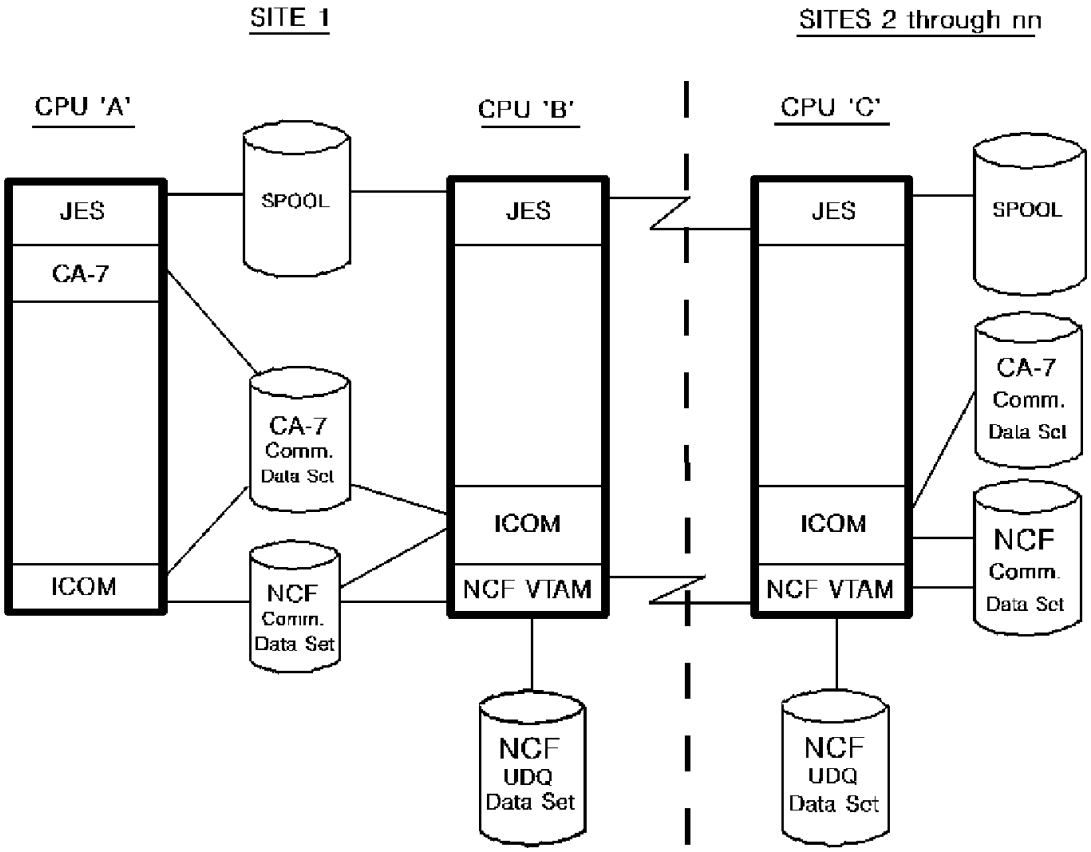
The rest of the jobs are triggered in:

- The trigger relationship is identified by the word **JTRG** next to the flowchart. These relationships must be defined to CA-7 on the Job Triggering screen.
- The word **PRED** on the flowchart identifies requirements that must be defined to CA-7 on the CPU Job Predecessors screen.

Following the three standard flowcharts are three alternate flowcharts. They reflect the same relationships as the standard flowcharts but use a format that is similar to the output from the CA-7 FSTRUC command. You may use this format if you find it easier to work with. You can then use the output from the FSTRUC command to make sure you defined your schedules correctly.


JOB01
1600/0100
ONLINE DOWN
JTRG
JOB01
JTRG
JOB06
JOB07
JTRG
JTRG
JOB03
JOB04
JTRG
PRED
JOB08
JTRG
JOB06


JOB01
1600/0100
ONLINE DOWN
JTRG
JOB02
JTRG
JOB03
JOB04
JTRG
PRED
JOB05


SITE 1
SITES 2 through nn
CPU 'A'
CPU 'B'
CPU 'C'
JES
CA-7
ICOM
SPOOL
CA-7
Comm.
Data Set
NCF
Comm.
Data Set
JES
ICOM
NCF VTAM
NCF
UDQ
Data Set
JES
ICOM
NCF VTAM
SPOOL
CA-7
Comm.
Data Set
NCF
Comm.
Data Set
NCF
UDQ
Data Set

Jobname	DOTM/LDTM	Requirements
JOB01	**1600/0100**	**Online down**
JOB02		
JOB03		
JOB05		**JOB04**
JOB04		

Alternate Flowchart for SCHID=1, Daily Flow

Jobname	DOTM/LDTM	Requirements
JOB01	**1600/0100**	**Online down**
JOB02		
JOB06		
JOB03		
JOB08		**JOB04**
JOB05		
JOB07		
JOB04		

Alternate Flowchart for SCHID=2, First Day of Month

Jobname	DOTM/LDTM	Requirements
JOB01	**1800/0100**	**Online down**
JOB02		
JOB06		
JOB09		
JOB10		
JOB13		**JOB09, JOB11**
JOB14		
JOB07		
JOB11		
JOB12		**JOB14**
JOB05		

Alternate Flowchart for SCHID=3, Last Day of Month

Appendix C. Data Collection Worksheets

This appendix contains examples of several different worksheets you can use to get the information you need to define your jobs and schedules to CA-7. Because every data center is different, you will probably have to combine and modify these examples to meet your needs.

The worksheets with entries like #JOB and #END,JOB are designed to help you gather the documentation you will define on the Workload Documentation screens. The use of the # to identify documentation segments is explained in the *CA-7 Database Maintenance Guide*.

C.1 Sample Worksheet 1

JOBNAME _____ SYSTEM _____

RUN FREQUENCY

___ MONDAY - FRIDAY

___ TUESDAY - SATURDAY

___ WEEKLY DAY _____

___ BI-WEEKLY DAY _____

___ MONTHLY DAY _____

___ QUARTERLY WHEN _____

___ ANNUAL WHEN _____

___ OTHER DESCRIBE REQUIREMENTS _____
_____
_____

TIME OF DAY RUN (24-HOUR CLOCK) _____

IF JOB IS SCHEDULED ON A HOLIDAY, SHOULD IT

___ BE RUN THE PREVIOUS BUSINESS DAY ___ BE RUN THE NEXT BUSINESS DAY

___ NOT RUN AT ALL ___ RUN ANYWAY

LIST ALL IMMEDIATE PREDECESSORS TO THIS JOB:

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

LIST ANY JOBS THAT CANNOT RUN WITH THIS JOB:

_____ _____ _____ _____
_____ _____ _____ _____

LIST ANY JOBS THAT WILL BE RELEASED BY THIS JOB:

_____ _____ _____ _____
_____ _____ _____ _____

WHAT CONDITION CODES ARE CONSIDERED SUCCESSFUL FOR ALL STEPS OF THIS JOB?

_____

WHAT CONDITION CODES ARE CONSIDERED SUCCESSFUL FOR INDIVIDUAL STEPS OF THIS JOB?

STEP _____ CONDITION CODE _____

STEP _____ CONDITION CODE _____

STEP _____ CONDITION CODE _____

STEP _____ CONDITION CODE _____

STEP _____ CONDITION CODE _____

STEP _____ CONDITION CODE _____

PREPROCESSING REQUIREMENTS (CHECK ALL THAT APPLY):

___ CARD INPUT
WHO SUPPLIES IT _____ WHEN _____

___ TAPE INPUT (FROM OUTSIDE COMPUTER CENTER)
WHO SUPPLIES IT _____ WHEN _____

___ CONTROL CARDS (DATES/BATCH TOTALS)
WHO SUPPLIES IT _____ WHEN _____

AUTHORIZATIONS:

USER WILL TELL US WHEN TO RUN JOB
WHO/DEPT. _____ WHEN _____

MANUAL VERIFICATION BY OPERATOR
DESCRIBE _____
_____
_____

PROCESSING REQUIREMENTS:

RERUN/RESTART PROCEDURES

___ ON RESTART DATABASE

___ NOT ON DATABASE - DESCRIBE

_____
_____
_____

PREVIOUS INFORMATION SUPPLIED AND/OR VERIFIED BY:

PRODUCTION CONTROL _____

USER _____

APPLICATION PROGRAMMER _____

LOADED ON TO CA-7 DATABASE

DATE _____

SIGNATURE _____

PARALLEL TEST OF JOB UNDER CA-7

DATE _____

SIGNATURE _____

DATE IN PRODUCTION UNDER CA-7 _____

C.2 Sample Worksheet 2

```
#JOB
LAST UPDATED    XX/XX/XX                    JOBNAME XXXXXXXX

JOB SUMMARY:

     WHO IS RESPONSIBLE FOR PROBLEMS OTHER THAN THE ON-CALL PERSON?

                                                          _____________________

     HAVE ALL INDEXES BEEN BUILT?                         _____________________

     HAS VOL=RETAIN BEEN USED WHERE POSSIBLE?             _____________________

     HAS FREE=CLOSE BEEN USED WHERE POSSIBLE?             _____________________

     ARE THERE NORMAL CONDITION CODES OTHER THAN 000?     _____________________

     IF YES, EXPLAIN  ____________________________________________________

     IS THE OUTPUT DISTRIBUTION HOT?                      _____________________

     DO ALL REPORTS HAVE BANNER PAGES?                    _____________________

     ARE ANY PRINT TAPES CREATED?                         _____________________

     IF YES, IS THE NEXT STEP A TAPEPRINT STEP?           _____________________

#END,JOB
```

#SCHED

SCHEDULE SUMMARY:

WHAT IS THE ESTIMATED RUN TIME? _____

WHEN DOES THIS JOB RUN? _____

WHICH JOBS MUST IT RUN AFTER? _____

WHICH JOBS MUST IT RUN BEFORE? _____

WHICH JOBS CAN IT NOT RUN WITH? _____

IF DEPENDENT ON ONLY ONE JOB, AFTER WHICH STEP CAN THIS JOB START?

_____

CAN IT RUN ON ANY CPU? _____

CAN THE JOB RUN WITH THE ONLINE UP? _____

IF NO, WHICH FILES NEED TO BE DISABLED SO THAT IT CAN RUN?

_____

LIST ALL DATABASE FILES UPDATED _____

LIST ALL OUTSIDE CONDITIONS ON WHICH THIS JOB IS DEPENDENT
(WANG, SERIES1, OTHER)

_____

WHAT TIME ARE INPUT TRANSMISSIONS EXPECTED? _____

WHAT TIME ARE OUTPUT TRANSMISSIONS EXPECTED? _____

WHAT IS THE TRANSMISSION VOLUME? _____

WHAT LOCATIONS ARE AFFECTED? _____

IF WE ARE LATE, WHOM DO WE NOTIFY? _____

#END,SCHED

```
_____________________________________________________________________________
#SETUP

SETUP INSTRUCTIONS _____________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

#END,SETUP

_____________________________________________________________________________
#BALANCE

BALANCING INSTRUCTIONS:

     REPORT NUMBER:  _____________________________________________________
     REPORT TITLE:   _____________________________________________________
     PROGRAM NAME:   _____________________________________________________
     INSTRUCTIONS:   _____________________________________________________

#END,BALANCE

_____________________________________________________________________________
#DIST

DISTRIBUTION INSTRUCTIONS:

     BANNER PAGE KEY:          _____________________________________________
     REPORT ID:                _____________________________________________
     REPORT TITLE:             _____________________________________________
     INSTRUCTIONS:             _____________________________________________

     COPY RECIPIENT                 LOCATION
      1   ___________________ _____________________________________________
      2   ___________________ _____________________________________________
      3   ___________________ _____________________________________________
      4   ___________________ _____________________________________________

     BANNER PAGE KEY:          _____________________________________________
     REPORT ID:                _____________________________________________
     REPORT TITLE:             _____________________________________________
     INSTRUCTIONS:             _____________________________________________

     COPY RECIPIENT                 LOCATION
      1   ___________________ _____________________________________________
      2   ___________________ _____________________________________________
      3   ___________________ _____________________________________________
      4   ___________________ _____________________________________________

#END,DIST
_____________________________________________________________________________
```

```
_____________________________________________________________________________
#OFFSITE

CRITICAL DATA SETS CREATED OR UPDATED             CODE
_____________________________________________  ____________________________
_____________________________________________  ____________________________
_____________________________________________  ____________________________
_____________________________________________  ____________________________

#END,OFFSITE
_____________________________________________________________________________
#ERRORS

PROGRAM       ERROR MSG           A C T I O N
____________  __________________  ____________________________________________
____________  __________________  ____________________________________________
____________  __________________  ____________________________________________
____________  __________________  ____________________________________________

#END,ERRORS
_____________________________________________________________________________
#RESTART

RESTART PROCEDURES:

     CA-11 RESTARTABLE                                 ____________________________

     CA-11 NONRESTARTABLE - RESTART IN STEP XX         ____________________________

     USER NONRESTARTABLE - VSAM UPDATE - RESTART IN STEP XX -
     RUN JOB XXXXXX TO RECOVER
                                                       ____________________________
     CA-11 RESTARTABLE - DATABASE UPDATE - RECOVER DATABASE BEFORE RESTARTING

                                                       ____________________________

#END,RESTART
_____________________________________________________________________________
```

C.3 Sample Worksheet 3

```
_____________________________________________________________________________
#SCHEDULE

SCHEDULING CRITERIA:

     FREQUENCY OF JOB TO BE SCHEDULED:   _____________________________
     SCHEDULED RELEASE WORKDAY TO USER:  _____________________________
     TEAM NO.:                           _____________________________
     RESTART INSTRUCTIONS (O/S OR CA-11):_____________________________
     JOB MUST RUN BEFORE/AFTER JOB:      _____________________________
     OUTPUT TO BALANCING (YES OR NO):    _____________________________

#END,SCHEDULE
_____________________________________________________________________________

#JCL

LIST OF PRODUCTION JCL, DATE CARDS, AND REQUIRED OVERRIDES:

     EXECUTION JCL LISTING:      _____________________________________

     DATE CARD FORMAT:           _____________________________________

     SPECIAL OVERRIDES REQUIRED: _____________________________________

#END,JCL
_____________________________________________________________________________

#MESSAGES

PROGRAM ERROR MESSAGES:

     STEP NO:           _____________________________________________
     PGM ID:            _____________________________________________
     COND-CODE:         _____________________________________________
     MESSAGE DISPLAYED: _____________________________________________
     CAUSE:             _____________________________________________
     ACTION:            _____________________________________________
```

#END,MESSAGES
_____

_____
#RESTART

OS RESTART PROCEDURES: _____
_____
_____
#END,RESTART
_____

#VITAL

VITAL RECORDS PROGRAM FOR MAGNETIC TAPE:

FILE NO: _____
FILE DESCRIPTION: _____
ESTIMATED VOLUME: _____
RETENTION PERIOD: _____
ROTATION INSTRUCTIONS: _____

#END,VITAL
_____

#DISASTER

DISASTER RECOVERY PLAN: _____
_____
_____

DISASTER RECOVERY RESTART REQUIREMENTS:

JOB STREAM NO.: _____
NAME: _____
RESTART AT STEP NO.: _____
NAME: _____
NORMAL RUN TIME(CPU): _____
CLOCK: _____
RUN FREQUENCY: _____
PERIPHERALS NEEDED: _____
MEMORY NEEDED: _____

```
     BACKUP FILES NEEDED: _____________________________________________
     AGE (CURRENT,PREV,OTHER): ________________________________________
     WHERE LOCATED:       _____________________________________________
     REPORTS PRODUCED:    _____________________________________________
     NUMBER:              _____________________________________________
     NAME:                _____________________________________________
     FREQUENCY:           _____________________________________________
     USER DEPT.:          _____________________________________________
     DELIVER TO:          _____________________________________________

#END,DISASTER
_____________________________________________________________________________
_____________________________________________________________________________
#PRINT

COMPUTER PRINTER AND CARD DISPOSITION SHEET:

     STEP NO.:            _____________________________________________
     JOB NAME:            _____________________________________________
     EFFECTIVE DATE:      _____________________________________________
     JOB STEP NAME:       _____________________________________________
     DATA SET NAME:       _____________________________________________
     ENGLISH DATA SET NAME: ___________________________________________
     NO. OF COPIES:       _____________________________________________
     SPECIAL FORM:        _____________________________________________

PRINTER OUTPUT:

     DECOLLATE: _______________________________________________________
     BURST:     _______________________________________________________
     STRIP:     _______________________________________________________
     LEFT:      _______________________________________________________
     RIGHT:     _______________________________________________________
     OTHER:     _______________________________________________________

DISTRIBUTION TO USER:

     ORIGINAL:  _______________________________________________________
     1ST COPY:  _______________________________________________________
     2ND COPY:  _______________________________________________________
     3RD COPY:  _______________________________________________________
     4TH COPY:  _______________________________________________________

BALANCING DATA:

     THIS O/P IS USED TO BALANCE:              _____________________________
     OUT OF BALANCE NOTIFY:                    _____________________________
     MANUAL BALANCING TIME:                    _____________________________
     DATA USED TO BALANCE THIS OUTPUT:         _____________________________
     RETENTION OF O/P AND BALANCE WORKSHEET:   _____________________________
```

```
INPUT CARDS:

     DATA SET NAME: _____________________________________________________
     DISPOSITION:   _____________________________________________________

OUTPUT CARDS:

     DATA SET NAME: _____________________________________________________
     DISPOSITION:   _____________________________________________________
INPUT TAPES:

     DATA SET NAME: _____________________________________________________
     DISPOSITION:   _____________________________________________________

OUTPUT TAPES:

     DATA SET NAME: _____________________________________________________
     DISPOSITION:   _____________________________________________________


#END,PRINT
_____________________________________________________________________________
#BALFORM

BALANCING FORMULA:

     STEP NUMBER: _______________________________________________________

#END,BALFORM
_____________________________________________________________________________
#BALSHEET

BALANCE WORKSHEET:

     STEP NUMBER: _______________________________________________________

#END,BALSHEET
_____________________________________________________________________________

#PRINTSPE

COMPUTER PROGRAM PRINTER SPECIFICATION:

     JOB STEP NO.:     _____________________________________________________
     JOB STEP NAME:    _____________________________________________________
     DATA SET NAME:    _____________________________________________________
     FORM DESCRIPTION: _____________________________________________________
     NO. OF COPIES:    _____________________________________________________
```

```
CARRIAGE CONTROL

     TAPE NO.:       _____________________________________________________
     LINES PER INCH: _____________________________________________________
     LENGTH:         _____________________________________________________
     CHANNEL:        _____________________________________________________

ALIGNMENT INSTRUCTIONS:

#END,PRINTSPE
_____________________________________________________________________________
```

Glossary

A

ACT. Active queue.

active area. A temporary work area used by the CA-7 text editor and CA-7 schedule editor.

Active queue. A file which contains a record of all jobs currently executing on your CPUs.

alternate master terminal. One or more terminals defined to CA-7 with special capabilities such as issuing the /SHUT-DOWN command.

APA. Automated performance analysis.

automated performance analysis. Statistical graphs that report on job, system, network, and database activity.

B

base calendars. See calendars.

batch card load program. A CA-7 program which loads card input or card-image data to a file for the purpose of satisfying data set requirements or for performing data set triggers.

batch terminal. A set of files which perform the same as a physical terminal using the SASSBSTR program.

BCLP. Batch card load program.

browse data set. A wraparound file used to replace the master station printer for CA-7. The master station receives messages about schedule scan, submit, and SMF feedback activity. It also receives messages about any job not directed to a specific station.

C

calendars. Load modules built using CA-7 macros. They define which days are considered processing days in your data center and which days are not processing days.

completion processing. What happens when a job under CA-7's control ends successfully: requirements are posted; other jobs are triggered; the database, Prior-run queue, and run log are updated.

D

database. Three files (job, index and dataset) which contain the information defined to CA-7.

database maintenance. Adding, deleting, or changing the information in the CA-7 database.

data set number. A unique number assigned to each data set by CA-7.

data set requirement. A condition that a job cannot be submitted until a data set is marked as updated.

data set trigger. The selection and submission of a job based on the creation of a data set.

DB. The command that can be entered on any CA-7 screen to display the Data Base Maintenance Menu.

deadline start time. See start time.

demand. Manually schedule a job that is normally run on a different day or is only run by request.

dependent job. A job that must wait for another job to complete successfully so it can run.

DLDT. Deadline date and time. See start time.

DOTM. Due-out time.

DSNBR. Data set number.

DTTM. Date and time.

due-out time. The time that a job or network should be finished processing, as defined on the schedule screens.

E

event scheduling. See triggering.

F

forecast. A list that shows what is supposed to be processed during a specified period of time, based on what is defined in the database.

I

ICOM. Independent communications manager.

independent communications manager. A program which passes SMF data from each CPU to CA-7.

index. A field on the scheduling criteria screens which allows you to adjust the scheduling day so it falls a certain number of processing days before or after the day described on the rest of the screen.

index number. The number you assign to each JCL library CA-7 has access to. The number is assigned in the initialization file.

INIT deck. Initialization file.

initialization file. The control parameters you use to customize CA-7 to your data center.

input network. Up to nine sequential preprocessing tasks performed before a job is run on the CPU.

input network trigger. The selection and submission of a CPU job when its preprocessing tasks are complete.

J

job. A task or unit of work directed to a CPU. Usually includes a set of JCL control statements with one JOB statement and additional statements that execute one or more steps.

job requirement. A condition that a job cannot be submitted until a previous job has completed successfully.

job stream. A group of related jobs each with its own job definition.

job trigger. The selection and submission of a job based on the successful completion of another job.

L

late. A job or network that has not started by its deadline start time or has not completed by its due-out time.

lead time. The amount of clock time required to complete a task.

load. A process that adds job and data set definitions to the CA-7 database. This is how CA-7 knows which data sets are created and used by each job.

M

master station. A terminal defined to CA-7 that receives special messages related to job activity. This is usually the browse data set.

master terminal. A terminal defined to CA-7 which has special capabilities such as issuing the /SHUTDOWN command.

mutual exclusion. A job requirement that prevents two jobs from running at the same time, possibly because they update the same data set. One job cannot be submitted until the other ends successfully.

N

network. Non-computer tasks which must be performed either before or after the job runs on the computer.

network requirement. A condition that a CPU job cannot be submitted until all preprocessing tasks are complete.

nonexecutable job. A job that does not require JCL and is not submitted to a CPU. In all other respects it is exactly like a CPU job; it can be scheduled like a CPU job or defined as a requirement for other jobs.

nonprocessing days. A day when no work is scheduled by CA-7. Usually a weekend or holiday.

NOSCHDAY. A nonprocessing day defined in a base calendar. Usually used to identify all weekends and holidays.

NWK. Network.

O

on-request job. A job that is defined to CA-7 but never scheduled automatically.

operator ID. A logon ID for CA-7.

output network. The postprocessing tasks performed after a job is run on the CPU.

P

post. Satisfy a requirement, either by issuing the POST command or by typing an X on the CPU Jobs Status screen.

Postprocessing queue. A file which contains a record of each workstation in an output network that is currently scheduled.

PRE. Preprocessing queue.

predecessor. A requirement that must be satisfied before a job can be submitted to the CPU.

Preprocessing queue. A file which contains a record of each workstation in an input network that is currently scheduled.

primary log. A file which contains records of activity under CA-7.

Prior-run queue. A file which contains a record of the last successful run of each job under CA-7's control.

processing days. Days when jobs can be scheduled for processing by CA-7.

PROSE. Free-form documentation added to jobs, networks, systems, and data sets.

PRRN. Prior-run queue.

PST. Postprocessing queue.

Q

QDWELL. A time factor added to the scan span to prevent jobs from being late as soon as they enter the Request queue.

QTM. Queue time.

queue. A file containing CA-7 control information.

queue time. The amount of time a job can be in the request queue before it is considered to be late.

R

RDY. Ready queue.

Ready queue. A file which contains job records for jobs that have been submitted to the CPU but are not yet active, and jobs that are ready to be submitted to the CPU but are waiting for resources to become available.

REQ. Request queue.

Request queue. A file which contains a record of all jobs waiting for their requirements to be satisfied so they can be submitted to the CPU. Also includes jobs that need to be restarted because they abended or ended with JCL errors or bad condition codes. Briefly includes jobs that ended successfully and are going through completion processing.

requirement. A condition that must be satisfied before a job can run. Requirements include the completion of CPU jobs, the completion of input networks, the creation of data sets, or the completion of manual tasks.

resolving a schedule. Telling CA-7 to compare the scheduling criteria to the base calendar specified on the CPU Job Scheduling screen to determine the exact days a job will be processed.

RLOG. Run log.

run log. A log which contains a record of all occurrences of all jobs and networks completed or restarted under CA-7's control in the last five days.

S

satisfaction lead time. Defines a time limit within which a requirement for a job must be met to be satisfied at queue entry. If not met, the requirement must be posted while the job is in the Request queue.

SBTM. Submit time.

scan increment. The amount of time that passes before CA-7 scans the database looking for jobs to bring into the Request queue.

scan span. The amount of time that CA-7 looks forward in the database when it looks for jobs to bring into the Request queue.

SCHD DAY ONLY. A value specified on the OPTIONS parameter in the calendar macro. It tells CA-7 to include only workdays when counting relative days.

schedule. A set of instructions defined for a job that tell CA-7 when it should be processed.

schedule ID. A scheduling variation. A job can have up to 255 different scheduling variations, each with its own schedule ID, scheduling criteria, requirements, and triggers.

schedule resolution. See resolving a schedule.

schedule scan. The process that scans the database and brings jobs into the Request queue at the right time on the right day. Also brings networks in the Preprocessing and Postprocessing queues.

SCHID. Schedule ID.

secondary log. A file which contains records of activity under CA-7.

segment. Part of documentation that is introduced by a label so it can be displayed separately. It is displayed by issuing the LPROS command and specifying the segment name on the SEG parameter.

SID. Schedule ID.

SMF. The IBM System Management Facility which generates records for all activities on the CPU.

SSCN. Schedule scan.

start time. Deadline start time. The time when a job should start in order for it to be finished by its due-out time. CA-7 calculates this by subtracting the job's lead time from its due-out time.

station. See workstation.

STTM. Start time.

submit time. A requirement that CA-7 not submit the job until this time is reached.

successor. A job that runs after another job or an output network whose tasks must be performed after a job ends on the CPU.

system. A name assigned to a group of jobs, usually jobs that belong to the same application.

T

terminal. An input/output path to CA-7. This includes IBM 3270-compatible CRTs (VTAM), system consoles, batch data sets, and a special trailer terminal.

time scheduling. Scheduling jobs for processing at certain times on certain days.

top line command. A command entered on the first line of any CA-7 screen except the CA-7 text editor. This can be the name of a formatted screen or any other CA-7 command. See the *CA-7 Reference Summary* for syntax.

Trailer queue. A file which contains JCL, control records, and predecessor information.

trailer terminal. A nonphysical terminal for processing input from the trailer step and U7SVC program. Input comes through the communications data set. Output is sent to the master station.

transfer. Go directly to a formatted screen by typing its screen ID on another screen.

TRGID. Trigger ID.

trigger. An event that causes a job to be brought into the Request queue.

trigger ID. The schedule ID a job is to use when it gets triggered into the Request queue.

triggering. Event scheduling. Bringing jobs into the Request queue based on the successful completion of an activity, like the end of another job or the creation of a data set.

TRLR. Trailer queue.

U

user dependency. See user requirement.

user requirement. A manual requirement which must be satisfied before a job can be submitted.

W

WLB. Workload balancing.

WLP. Workload planning.

work area. See active area.

workday. A day when work is scheduled for processing by CA-7.

workload balancing. The facility in CA-7 which prevents jobs from being submitted until resources are available to process them.

workload planning. The facility in CA-7 which lets you model your workload against your resources to project the processing outcome.

workstation. The place where a non-CPU task is performed.

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